AMATEUR RADIO

JANUARY 1949

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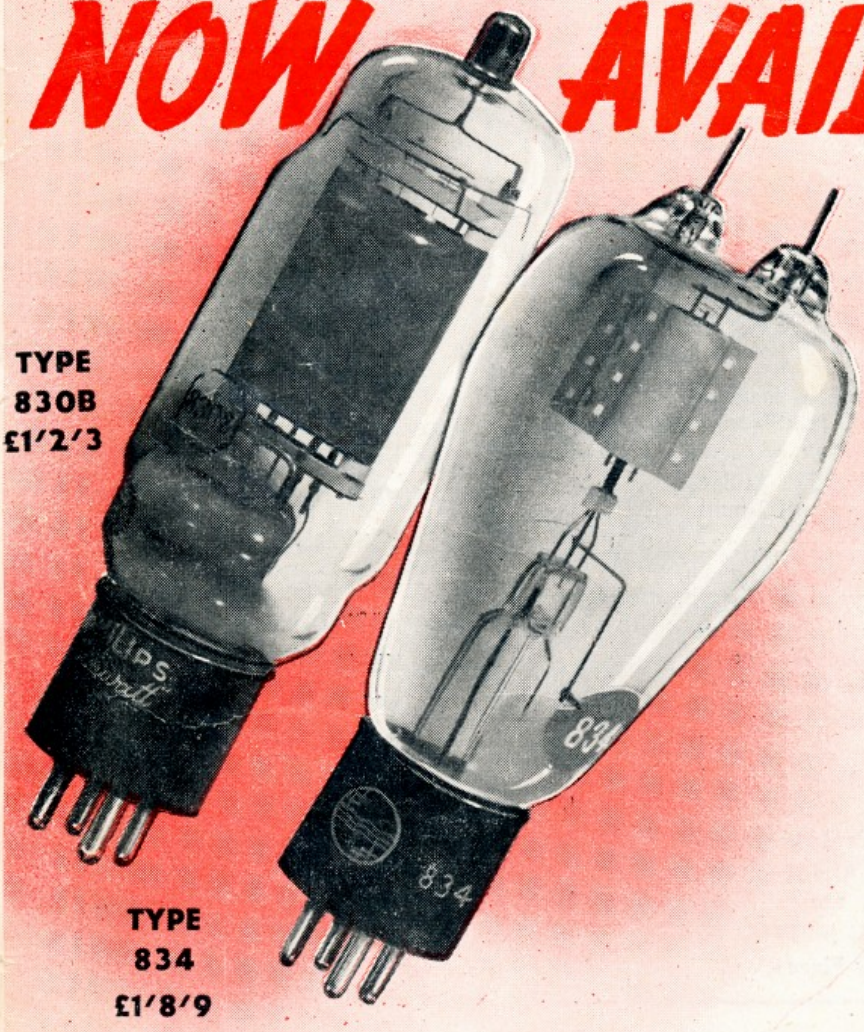

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— IN THIS ISSUE —

AMATEUR RADIO

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EDITORIAL

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Browsing through some official correspondence the other night, I came across a term now increasingly applied wherein the Amateur Frequency Allocations are referred to as the "Amateur Services." This term came into being as the result of the Atlantic City Convention, and signified recognition of work performed by the radio amateurs throughout the years.

Progress of the art has been shared by professional and amateur alike, and it is difficult to tell where one has started and the other finished. The fact is, that some of the world's leading radio scientists have started as humble experimenters, and, having achieved highest professional honours, still jealously guard their amateur status in the quietness of their own homes. Yes, the amateur services do pay dividends to all who participate, be they business men or scientists, and provide a meeting ground for all such, regardless of nationality or creed.

To the young experimenter, and the old hand alike, I do sincerely suggest that all privileges in the amateur services so hardly won in the past, should be valued and guarded against indifference or carelessness.

Our ambition and creed for this New Year should give us a fixed determination to be proud of the service to which we belong, and preserve a well-balanced outlook, placing family responsibilities before all else, but determined to do all we can to uphold the traditions of our forebears in the splendid hobby of Amateur Radio.

P.E.

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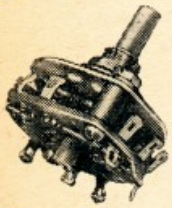

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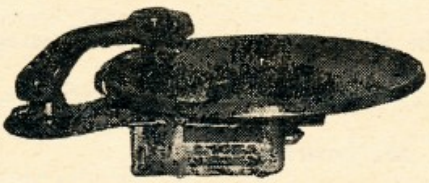

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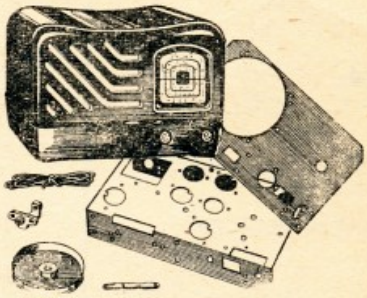

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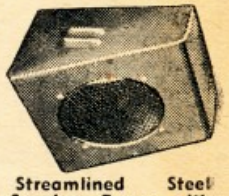

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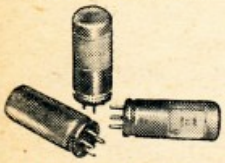

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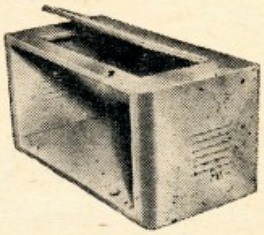

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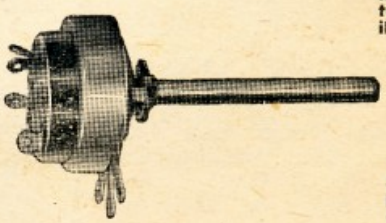

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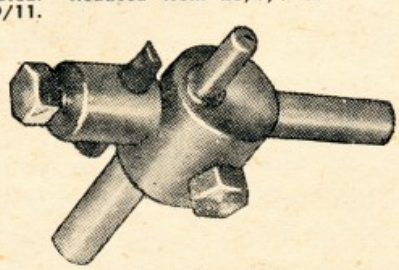

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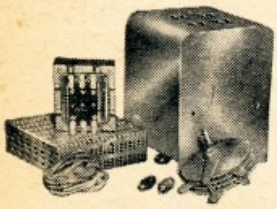

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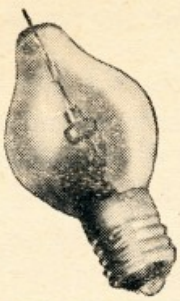

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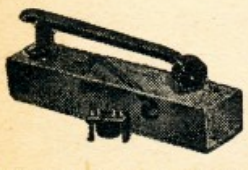

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Series Cathode Modulation

BY PETER H. ADAMS,* VK2JX

Cathode Modulation has been widely used in Amateur phone transmitters and found to be effective, if somewhat critical of adjustment. It is surprising therefore that series, or direct coupled, cathode modulation, which is a logical development of the normal cathode modulation system has been almost entirely neglected.

This modulation system was used by the author—and no doubt many others—some time before cathode modulation was "invented" by Frank Jones of the magazine "Radio." It employs less equipment and a transmitter using it is just as easy to adjust as one with plate modulation. Furthermore—and this is very important these days—it is almost impossible to produce splatter with it even when the modulation percentage is increased beyond the 100% mark.

The basic circuit is shown in Fig. 1. It will be seen that the modulated amplifier has fixed bias and grid-leak bias in addition to the bias provided by the d.c. drop across the modulator tube. Whilst these three sources of bias are not all essential, their inclusion obviates the need for critical drive adjustment which is typical of grid modulation and simple cathode modulation.

MODULATED AMPLIFIER

The most suitable tube for use in the r.f. power amplifier stage is a high-mu triode which operates normally at a reasonably high plate voltage. A tube with an amplification factor of 30 or more, and typical plate voltage of 1,500 or so, has been found to give very good results. Of course, two tubes in push pull could be used provided the total plate current requirements are not too high. A high voltage low current final is best because it can be effectively modulated with quite a small modulator tube.

Tubes such as the 811, 812, 35T and 100TH have been found to give excellent results in practice, whilst triodes with an amplification factor as low as 10 have been quite satisfactory.

MODULATOR TUBE

A triode may be used as the modulator and good results have been obtained with a pair of 45s in parallel. These were originally used as keyer tubes in a c.w. transmitter and, as there seemed no reason why audio (speech) voltages could not be applied to the grids instead of the d.c. for keying, the idea was tried and quite nice modulation resulted. However a beam tetrode was subsequently tried and its advantages over triodes was immediately apparent. Firstly, by supplying an adjustable voltage to the screen it is possible to vary the effective impedance of the modulator tube over a wide range and so arrive at an exact match to the modulated amplifier very easily. Further, the fact that the plate current in a pentode or tetrode is substantially independent of the plate voltage allows a tube with a given plate dissipation to modulate a larger amount of r.f. power.

A singe 6L6G will modulate a final taking 100 watts input to 100% quite effectively and yet the modulator requires no d.c. plate supply and no modulation transformer—surely the simplest and most economical system that could be used!

THEORETICAL CONSIDERATIONS

The theory of operation will be quite apparent from a study of Fig. 1. The modulated amplifier operates between class B and class C conditions, but may be regarded as presenting a resistive load to the modulator tube which is not strictly linear. Suppose, for example, we have a total plate supply of 1,500 volts and in the unmodulated condition the modulator resistance is adjusted by the screen voltage to a value that results in a 300 volt drop across the modulator tube. Then obviously the effective plate voltage on the modulated amplifier is 1,200 volts. Suppose now that an a.c. voltage of 10 volts peak is applied to the grid of the modulator tube. On the maximum negative swing the current through the modulator tube is reduced and as the p.a. is also in series with it, the current through this tube is reduced also and hence the voltage drop across it decreases.

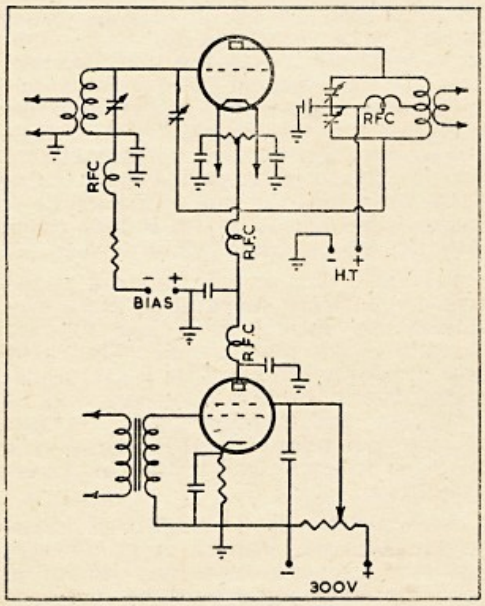


Fig. 1.
Basic circuit for series cathode modulation. By-pass capacitors for cathode and screen of modulator tube should be suitable values for speech frequencies. All others are r.f. by-passes only and should have a reasonably high reactance at audio frequencies. See text for values.

Suppose this voltage drops from 1,200 to 900 volts. Then the voltage across the modulator tube must rise to 600 volts, since the total of 1,500 volts is unchanged. This change of 300 volts across the modulator is added to the bias applied to the modulated amplifier and substracted from the plate voltage.

Conversely, when the modulator grid is at the maximum positive swing of the modulating voltage, the drop across the modulated amplifier may rise to 1,400 volts, leaving 100 volts across the modulator tube. This means that the grid bias for the p.a. has been reduced 200 volts from the unmodulated condition and the plate voltage has been increased 200 volts. We therefore have modulation of both grid bias and plate voltage which is the basic principles of cathode modulation.

It will be noted that, in the example, an equal change in modulator grid voltage was not shown as producing an equal change in voltage between modulator plate and cathode. This could occur under certain conditions, but it is not essential in practice because the efficiency of the modulated amplifier decreases when the bias on it is high. The actual operating conditions are quite complex, but fortunately the correct adjustment for 100% modulation can be arrived at quite easily in practice.

Under full modulation, of course, the plate current of the modulated amplifier will cut off completely at the maximum negative swing of the moduating voltage, but this does not mean that the voltage across the modulator tube would then be 1,500 volts. Actually it might only be 600 or 700 volts because the total bias on the modulated amplifier would then be high enough to cut the plate current off, even with the full r.f. input applied. In other words the resistance of the p.a. tube becomes almost infinite at this point.

EFFICIENCY AND PLATE DISSIPATION

A class C plate modulated amplifier will generally have a tube efficiency of about 70%. As a cathode modulated stage is part grid, or efficiency, modulation and part plate, the efficiency without modulation is generally of the order of 50%. Then be on the safe side and allow for circuit losses as well, it is a good idea to base any calculations on an overall efficiency of 40%.

In a 100% plate modulated stage, the peak plate voltage and peak plate current both increase to double their value without modulation. For instance an

* "Waigani," Plateau Rd., Avalon Beach, N.S.W.

809 drawing 100 Ma. at 1,000 volts will, under plate modulation, be subjected to 2,000 volts and will draw approximately 200 Ma. on 100% peak. Hence, provided the plate dissipation is not exceeded, there is no reason why the 809 should not be operated continuously at 2,000 volts. With series cathode modulation the plate voltage does not increase beyond the supply voltage under modulation and so it is quite possible to operate a tube that is series cathode modulated at a supply voltage of twice the rated plate voltage for plate modulation. However the plate current must be limited to a value that does not exceed the allowable plate dissipation.

Taking a practical case, the maximum plate dissipation of an 812 tube under I.C.A.S. ratings is 55 watts and the plate voltage for plate modulation is 1,250 volts. Therefore we can operate with a supply voltage of 2,500 volts. At 50% tube efficiency we can operate with a plate input of twice the rated dissipation, i.e. 2 x 55 or 110 watts. Now assuming that we have 300 volts drop across the modulator tube, the effective plate voltage on the modulated amplifier is 2,200 and for an input of 110 watts, a plate current of 50 Ma. is indicated. This is the maximum that can be permitted without exceeding the plate dissipation for the tube.

For the modulator a 6L6 is quite suitable, because it will easily pass this plate current and the plate dissipation 300 x 0.05, or 15 watts, is within its ratings. Of course, if the current or dissipation were too high for a particular modulator tube, two such tubes could be used in parallel.

SPEECH AMPLIFIER Using a 6L6 modulator, sufficient gain to modulate 100 watts input from a crystal microphone can be obtained with a speech amplifier consisting of a 6J7G pentode resistance coupled to a 6J5 triode which in turn is transformer coupled to the grid of the 6L6. Transformer coupling allows the 6L6 grid to be driven positive on peaks without appreciable distortion. A 2 to 1 step-up ratio is quite satisfactory and for speech the transformer need not be of particularly high quality.

The lower frequencies should be attenuated by using a small coupling condenser between the first two stages, as is normal practice in any speech amplifier.

In the VK2JX transmitter a switch on the front panel of the speech amplifier switches it into circuit as an amplifier for the receiver when the transmitter is off. The 6L6 thus feeds a speaker and is supplied with about 300 volts from the speech amplifier power supply for the plate. In a third position on this switch the filament centre tap on the final is connected direct to earth and the 6L6 tube, still connected to the speaker, is arranged as an audio oscillator and acts as a keying monitor for c.w. transmission. Keying circuits are also opened up in the transmitter, so by operating this switch it is possible to change over instantly from receiving to either phone or c.w. transmission.

It will be noted that cathode bias is used on the modulator tube. No doubt a wider range of operating conditions could be obtained if this resistor were made variable, but in practice it was found that a fixed resistor of the value normally used in class A amplification was quite satisfactory and made initial adjustment of the modulation much simpler. For a 6L6 tube a 200 ohm resistor was used and gave good results.

The screen voltage for the modulator tube is obtained from a potentiometer connected across a 300 volt supply. This is mounted on the front panel for easy adjustment.

R.F. FILTERING Great care must be taken to ensure that no r.f. current flows through the modulator tube. Filament by-pass condensers for the modulated amplifier should not be larger than 0.005 uF. or the top speech frequencies will be cut. At least two different r.f. chokes should be inserted in the lead from final filament c.t. to the modulator plate and these should be by-passed to earth as shown by condensers of 0.001 uF. or thereabouts.

It goes without saying that in any speech amplifier there should be no r.f. pick-up whatever in the input circuits, microphone leads, etc., and the complete amplifier should be built in a metal shield-box.

CLIPPER ACTION In a plate modulated transmitter the plate current of the modulated amplifier will cut off on negative modulation peaks whenever the modulation exceeds 100%. After the plate current cuts off the effective plate voltage actually goes negative and therefore, if the modulation is considerably greater than 100%, the tube remains non-conducting for an appreciable period and under these conditions the side of the envelope immediately before cut off is very steep. In other words, transients are produced.

In effect, this is the same as if the transmitter were keyed at an audio frequency by means of a key inserted directly in the plate circuit. The clicks that would be produced by a c.w. transmitter keyed in this way can well be imagined and therefore it is not surprising that splatter results whenever a plate-modulated transmitter is overmodulated.

In a series cathode modulated transmitter the r.f. output drops to zero **before** the plate current cuts off and in fact, the audio input must be increased to the equivalent of several hundred per cent modulation before the plate current cuts off completely on negative peaks.

This will be readily understood on reference to Fig. 1. Suppose, under no modulation, the drop across the modulator tube is 300 volts and the total supply voltage is 1,500. The normal drive will be covered by the bias when this reaches 500 or 600 volts and therefore at this point the tube receives no effective drive and therefore produces no r.f. output. However the plate current is not quite cut off because, if it were, there would be no drop across the r.f. amplifier tube; that is, the modulator tube would behave like a switch that was open circuited. This will not happen till the total supply voltage, i.e. 1,500 vots, appears between plate and cathode of the modulator—and the grid will require a very high negative voltage to cut it off under these conditions.

Thus the positive peaks can be increased up to the equivalent of at least 200% modulaion before the plate current actually cuts off. There will therefore be no splatter although the second harmonic distortion will be high, due to the flattened negative peaks. The quality becomes rough, but on speech a surprisingly high percentage of this type of distortion can be tolerated and there is actually very little loss of intelligibility.

The action is similar to a clipper limiting the negative peaks only and, since the positive peaks do not produce splatter, there is no necessity to limit them and they do in fact produce a louder signal at the other end if they are not limited. In the series cathode modulated stage this clipper action is, of course, entirely automatic.

It is possible to go a step further and prevent complete cut off of the r.f. output on negative modulation peaks. This can be done very simply by connecting an adjustable resistor from filament c.t. of the modulated r.f. amplifier to earth, or virtually across the modulator tube. If this tube is then removed from its socket the resistor can be adjusted until, with normal drive, say 2 Ma., plate current flows. Then, when the modulator tube is put back, no matter how negative the grid is driven, the final plate current cannot go below this value. Under these conditions more gain can be built into the speech amplifier and the full gain used without any fear of splatter, but, at the same time, the distortion, of course, will be greater.

PRACTICAL ADJUSTMENT A series cathode modulated transmitter of this type is very simple to adjust. Assuming we have a 6L6 or similar tube as modulator with variable screen voltage supply, the first step is to adjust the modulator screen to maximum voltage (about 300 volts) and tune the transmitter up for maximum output just as though it was a c.w. transmitter. The fixed bias should be set at somewhat greater than cut off for the final and in addition a series grid leak, of about the normal value that would be used if no other form of bias were included, should be employed. The three different sources of bias may not always all be required, but, by including them, the necessity for critically adjusting the drive is obviated and the

exciter may be adjusted to produce maximum drive. This makes the transmitter just as easy to tune up as a c.w. transmitter.

In the VK2JX transmitter dry batteries are used for the final bias because they are convenient and do not add much resistance to the grid circuit. There is no reason, however, why a transformer-rectifier supply should not be used, but it should be well filtered, or hum may appear on the carrier. This is because the final, during part of the cycle, is working class B.

Due to the modulator tube acting as a cathode bias resistor, the dip in plate current at resonance will not be so pronounced and, if any difficulty is experienced in determining the exact tuning point, the modulator tube may be temporarily removed from its socket and a direct connection made between its plate and cathode socket connections. Alternatively, if a phone-c.w. switch is used, the transmitter may be switched to c.w. for tuning up. Then, on switching over, the tuning adjustment will be approximately correct for phone.

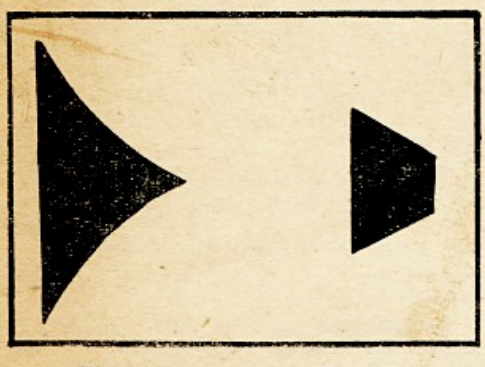


Fig. 2a. Fig. 2b.

2a—Normal series cathode modulation 100%.

2b—Normal series cathode modulation 50%.

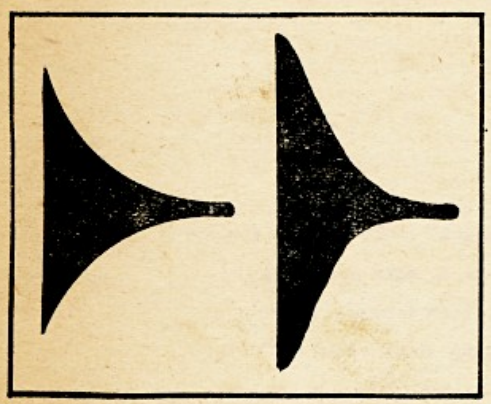


Fig. 2c. Fig. 2d.

2c—With "anti-splatter" resistor—about 120% modulation on the positive peaks.

2d—With "anti-splatter" resistor—about 200% modulation on the positive peaks.

SCR522 CIRCUIT DIAGRAMS

Photostat of the complete circuit and duplicate of parts lists for the SCR522 can be obtained from the Victorian Division, 191 Queen Street, Melbourne, at net cost. Price on application.

Having now adjusted the transmitter for maximum output, the screen voltage should be reduced until the r.f. line, or feeder, current increases when the microphone is spoken into. As the screen voltage is reduced, and with it the final plate current, the carrier power goes down, but the modulation percentage goes up. If a diode rectifier (or germanium crystal) type phone monitor is used it is quite easy to determine the screen voltage adjustment that gives the cleanest and loudest signal and this can subsequently be checked on the air.

Alternatively, the r.f. envelope or the trapezoid pattern may be viewed on an oscilloscope and the modulator screen voltage adjusted until 100% modulation is indicated. It will generally be found that at 50% modulation the sides of the trapezoid are quite straight but become slighly curved as the modulation percentage is further increased, until at 100% the pattern, instead of being a triangle, has the shape shown in Fig. 2a. This indicates non-linearity but no distortion is perceptible to the ear on speech under these conditions. What happens is that the carrier power increases as the modulation percentage is increased—the effect is similar to that which occurs in a controlled-carrier transmitter.

Of course, to obtain the trapezoid pattern, the audio voltage for the horizontal-deflecting plates must be obtained from the secondary of the audio transformer, i.e. the voltage at the grid of the modulator tube.

The patterns that are obtained with the "anti-splatter" resistor in circuit are also shown, under various modulation conditions, in Fig. 2. It will be seen that the carrier does not cut off under any conditions.

Using the series cathode modulation system on all Amateur bands, consistent reports of good quality have been received. In many cases "broadcast quality" reports have been given, but is felt that these are of little value and would hardly be accepted by broadcast station engineers. No doubt a harmonic analyser would reveal more than a negligible amount of distortion at full modulation, but with speech even 10 or 15% distortion is indistinguishable to the ear, especially after passing through the average receiver.

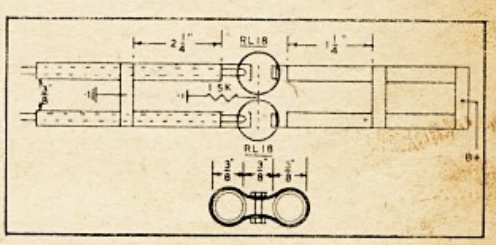
In conclusion, it is claimed for series cathode modulation that it is the simplest, most practical and certainly the cheapest system of modulation for Amateur use.

576 MEGACYCLES!

You think that it is too hard to get up this high? Then take a look at this simple transmitter of VK3RR's. It was on the air less than two hours after deciding to build it, which is nothing compared with the time put into building a low frequency rig.

The circuit is a push pull oscillator using two RL18 tubes and linear plate and cathode circuits. The ratings of the RL18 were given in "Amateur Radio," November 1946. It is a handy little triode with full ratings up to 600 Mc. with plate and grid leads coming out the top of the envelope and an EA50 type base for cathode and heater.

Both plate and cathode circuits are $\frac{3}{8}$" copper tubing spaced $\frac{3}{8}$" apart. The plate lines are above the chassis, supported at one end by a stand-off insulator and with the plate leads of the RL18 soldered directly to the other ends. The two grids are earthed through a 1,500 ohm resistance. The cathode lines are under the chassis and the heater leads are run through them.



The shorting bars used are $\frac{1}{4}$" lengths of 1" diameter copper tubing squashed into a "figure of eight" shaped round a pair of $\frac{3}{8}$" mandrels. On tightening with a bolt through the "waist," these form very efficient shorting bars due to the large area of contact. The tuning of the cathode lines is not critical as long as it is resonant at a lower frequency than the frequency of oscillation. This is determined by the plate lines and can be measured with Lecher wires. The power is taken off by a hairpin loop near the plate lines.

No by-pass condensers were found necessary anywhere when plate modulated at 7½ watts input.

So if you are looking for something simple, why not try 576 Mc.?

QUESTIONS AND ANSWERS

Q.10.—From VK3KP: In his article "Series Phased Aerial Arrays" ("A.R." May 1948) the late H. K. Love suggested using twin ribbon feeder for the radiators and quarter wave phasing lines of such aerials.

How would the velocity factors for this type of feeder (e.g. 0.77 for the 300 ohm type) affect the physical length of

(a) The radiators;

(b) The Phasing Lines?

CURING THAT STUBBORN B.C.I.

BY C. GIBSON,* VK3FO

The evergreen and complexing problem of b.c.i. reared its head at this location recently. The solution to the problem was unusual, and has not been published anywhere else as far as is known, and for those who may be in trouble perhaps the effective cure described will be worth a try.

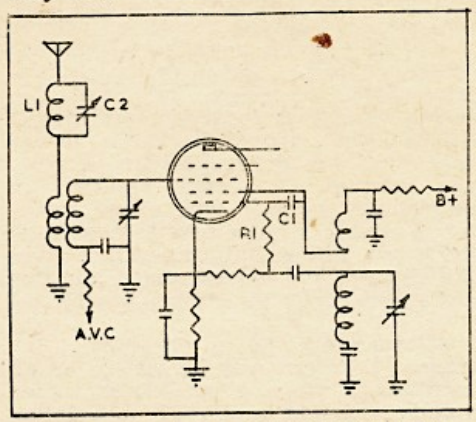
The set was a pre-war model using 6A7, 6D6, 6B7, 43, 2525, and unshielded coils, in fact everything that goes for trouble to Hams, from an interference point of view.

In this particular case the interference was that, in which, harmonics of the local oscillator beat with the transmitter signal to produce the intermediate frequency. The interference was not continuous over the whole tuning range, but could be tuned in or out at about 15 points on the dial, with the transmitter on 20 metres.

All the usual methods of eliminating the signal were tried, without avail, including r.f. chokes, wave traps, grid stoppers, etc. It was therefore decided to try and improve the waveform of the local oscillator, thus eliminating the harmonics AND the interference.

The voltage was reduced on the oscillator plate to the point where oscillation almost ceased—without result. Different values of grid leak, grid stoppers, and reduced coupling between grid and plate circuit also failed. Then the thought—remembering the benefits of negative feedback, in reducing audio distortion, it was decided to try this at r.f.

Since the oscillator tuned circuits have very low reactance at the harmonic frequencies concerned, a 2,500 ohm grid stopper was placed in the oscillator grid circuit, and a 0.5 pF. condenser connected straight from the grid to plate. A marked improvement was at once noticeable, a wave trap in the aerial lead, and a shield plate over the bottom of the chassis were fitted, resulting in complete elimination of the interference.



Conventional b.c. converter circuit, showing point of connection for R1, C1, and wave trap for L1-C2.
R1—2,500 ohms, ¼ watt.
C1—0.5 pF.
L1 } Tuned to trap interference on the
C2 } band required.

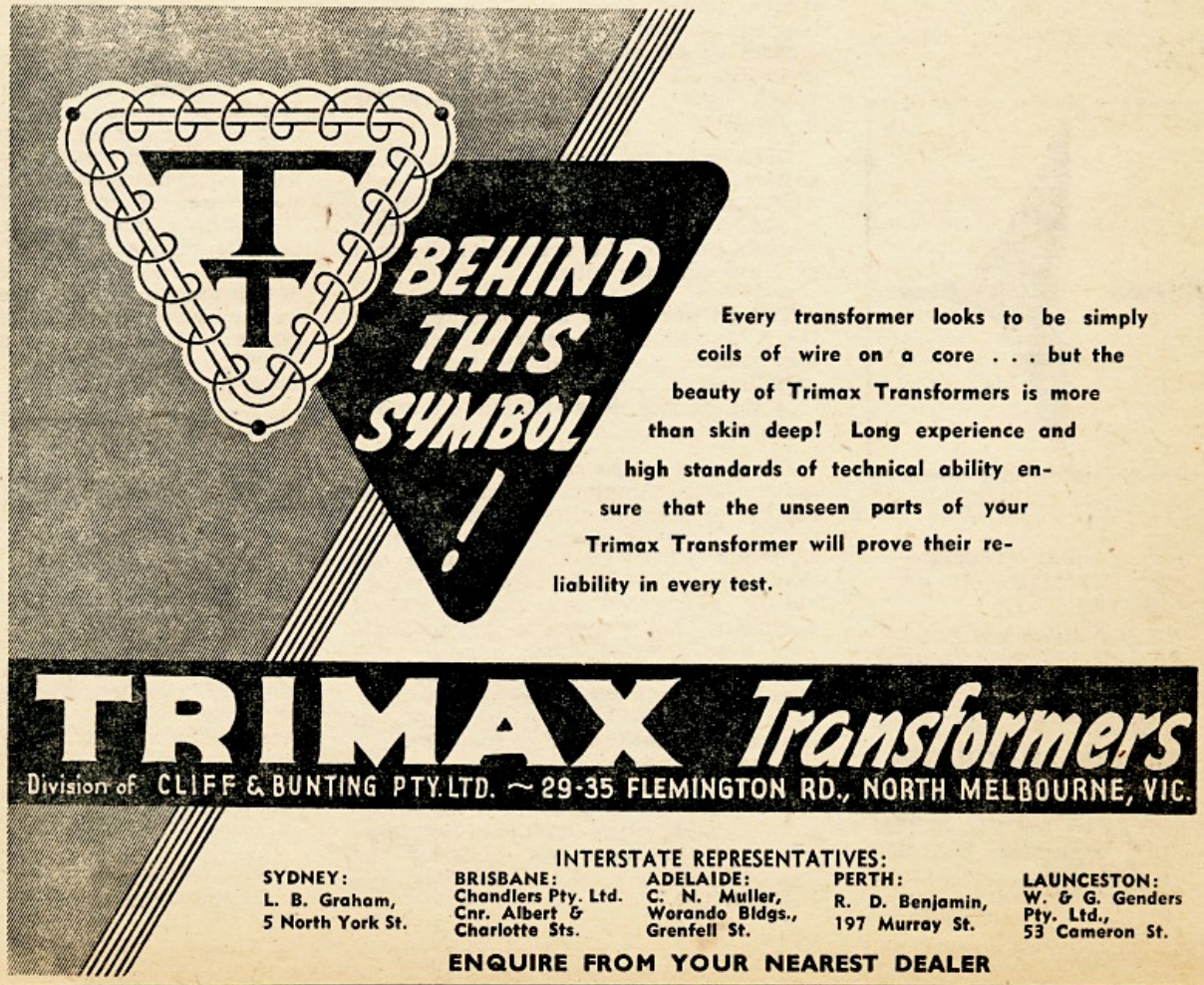
A larger resistance than 2,500 ohms would be more effective in preventing short circuiting of the feedback voltage to earth, but a larger value than this prevented the oscillator from functioning at the high frequency end of the tuning range.

In some cases, it may be necessary to use a smaller condenser than 0.5 pF., since due to Miller effect, this has the same effect on the tuning circuit as a much larger condenser from grid to earth. This apparent value is equal to 5 pF. multiplied by the gain of the tube. Thus the trimmer condenser must be reduced in capacity to compensate for this.

These modifications are not suitable for fitting in dual wave receivers unless provision can be made for switching them out of circuit on the short wave range, as they would prevent the oscillator from functioning on short waves.

In conclusion, I hope that none of the boys have trouble of this nature, but if so, try this one—it works, and how!

* 424 Centre Rd., Bentleigh, S.E.14, Vic.



IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

The charts accompanying this page, prepared by the Ionospheric Prediction Service of the Commonwealth Observatory, are similar to earlier sets in the series first published in the November, 1948, issue of this magazine. Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

The world zones, to which these charts refer, were listed in November and December, 1948, issues.

The Perth charts are similar to those based on Canberra, except that the Far East terminal is Shanghai in chart P-Z6. No forecasts are given from Perth to zones Z2 and Z4 for the current month. Chart P-Z2 would be essentially similar to P-Z1, whilst chart P-Z4 would be unreliable due to auroral activity in high northern latitudes.

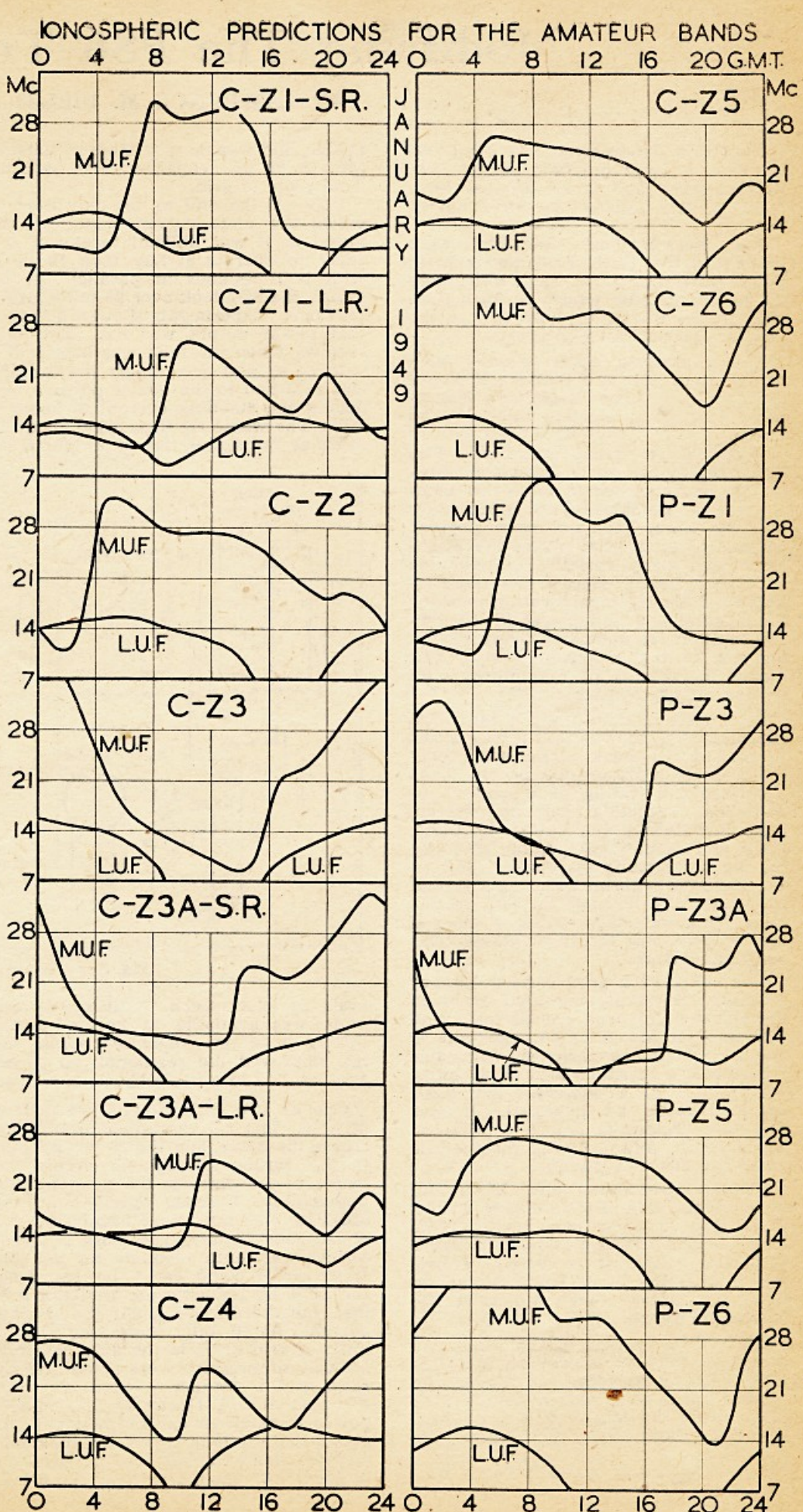
USE OF CHARTS

All that is necessary in using the charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum useable frequency (m.u.f.) of the F region of the ionosphere but above the lowest useful frequency (l.u.f.) for the desired contact. In two cases, zones 1 and 3a, it is necessary to consult both the short-route (s.r.) chart and the following long-route (l.r.) chart.

A practical example might be that of a contact desired between Sydney and Sheffield. The relevant charts are C-Z1-SR and C-Z1-LR. The 28 Mc. band should be open for a few hours before and after noon G.M.T. on the short route. The 14 Mc. band should be available from sunrise to sunset in England, with best conditions on short route towards the end of the English day, when the l.u.f. drops below 7 Mc. Best conditions on long route in the 14 Mc. band should be at about 0900 hours G.M.T. when the whole of the long route is in darkness. The only possibility of a contact in the 7 Mc. band is on short route during the English sunset period at which time there is a complete dark path over the Indian Ocean.

RELIABILITY OF FORECASTS

The prediction charts assume average ionospheric conditions for the current month. Normal day-to-day variations of the m.u.f. will be approximately 15% both above and below the mean curve. Abnormal day-to-day variations may be due to ionospheric storms, when actual values of the m.u.f. are very much lower than that forecast, or to Dellinger fades when the l.u.f. is much higher than normal. Sporadic ionisation in the E region of the ionosphere, although credited with useful effects at "50 and Up," is probably of little value on very long distance circuits.



Modifying The FS6 Transceiver

BY LAWRENCE M. BILLS*

The FS6 Transceiver has been obtainable in large numbers on the Disposal market, and in its original form was not very satisfactory for Amateur use.

The modifications described were made for the Bush Fire Network in South Australia, and it was a unit altered to this circuit which performed so well in the disastrous bush fire in the Gawler District last February.

The alterations apply equally well for Amateur use, and the circuit would make a very nice Beginner's Transmitter for those starting out in Ham Radio.

Released in great numbers, FS6 Transceivers are well known to Amateurs, many of whom have put them to use as portables. The transmitters as they were, have not been popular because of their poor phone characteristics, and many varieties of re-builds have been heard. Here is described an efficient little rig incorporating most of the existing bits and pieces of the FS6 Transmitter. It embodies many of the features of higher powered rigs, and makes the utmost of the limited high tension supply available.

Field tests in developing a bush fire control system showed that it was better to modulate a weak carrier well, than to modulate a strong one poorly. This prompted the testing of a variety of re-builds, including cathode, screen, plate, and Heising modulation. Of these, plate and screen modulation gave by far the best results in practice, and an experimental transmitter using a crystal controlled 6V6 driving an 807, modulated by a 6SN7GT driving a class B 6N7 as plate and screen modulator was very satisfactory.

The 807 gave a good carrier even at 20 mills. However, the total drain on the vibrator unit was over 80 mills, and this was far too much for the unit to stand, although experience with this vibrator at a constant load of 60 mills. over a year or so indicated that some overload could be tolerated. It was therefore decided to aim at 5 mills. no signal drain, thus allowing for the rise when the 807 was driven.

Various oscillators were tried, but none would give the necessary 2 to 3 mills grid drive without heavy plate current. The 6V6 drew about 25 mills, and was critical as to heater voltage, the drop in the leads being enough to bring the voltage down almost to the critical minimum.

An article by Don Knock suggested trying an EF50 as a pentode, and this tube certainly delivered the goods. The required grid drive was available at a plate drain of only 8 mills—the tube would oscillate with 4 volts on the heater, and was most reliable in starting after a 25 pF. capacitor was shunted from plate to grid.

This left the 6N7 as the only tube in which the plate current could be reduced as it was difficult to expect the 6SN7 to operate at less than 10 mills with both sections in parallel. At no signal, the 6N7 took over 25 mills, using zero bias. Experiments showed however that power output was not materially reduced when the tube was biased to 6 volts or so, and accordingly the cathode was returned to the heater positive, reducing the standing current to about 6 mills. The whole rig then drew about 55 mills at no signal, rising to about 75 mills on loud speech. A little over 250 volts was available at normal levels. Fitting a 16 uF. condenser across the h.t. improved the regulation on peaks, and resulted in a perfectly clean carrier.

One or two little details are worthy of note. The r.f. chokes materially increase the drive, and the 25 uF. by-pass in the carbon microphone circuit also increases the drive to the pre-amplifier appreciably. Cascade operation of the 6SN7GT was not found necessary, and an Airzone battery-type class B transformer was quite adequate for the job. Extra drive could easily be had from the EF50 by reducing the oscillator grid leak, but there was a slight rise of plate current. At 10 mills, there was over 3½ mills of grid drive to the 807. No plate or grid suppressors were found necessary at the frequency used for tests, viz. 5.62 Mc. A Denby 40 mill midget power transformer can be mounted just above the 807 tank coil if the bulkhead strut is removed, but care is necessary to get it low enough to clear the 6 volt plug in the transceiver case when it is mounted. This particular make has convenient mounting flanges. The mike transformer is best placed in the key box, and if the key slides are loosened the transformer can be slid into the case, and locked by re-tightening the slides.

A plate current meter is essential, and the thermo couple meter can be adapted by removing the couple and installing a shunt. Existing markings on the scale can be removed with Bon Ami, or Goddard's Plate Powder and spirit, without taking off the white enamel. The shunt fed tank enables the plate current a resonance to be adjusted as desired, and the unit will then work into a rod antenna of reasonable length, or into a random length of wire. The existing coil and switch is readily modified for this purpose.

A convenient mounting position for the EF50 is horizontally behind the panel in the position normally taken by the speech-key switch, which is transferred and used as a send-receive switch in place of the existing one. The crystal is handily mounted next to the EF50, or can be made to plug in from the front. A simple switch to change from crystal to v.f.o. would also be a proposition.

As a final refinement, a PEO4/15A, which is the transmitting version of the efficient EL3, could be used. These tubes are available with a normal 5 pin base, if ordered, and require rather less drive than the 807. R.F. output per milliamp. of plate current would also be a little higher, but the 807 has proved very satisfactory in field trials of this rig.

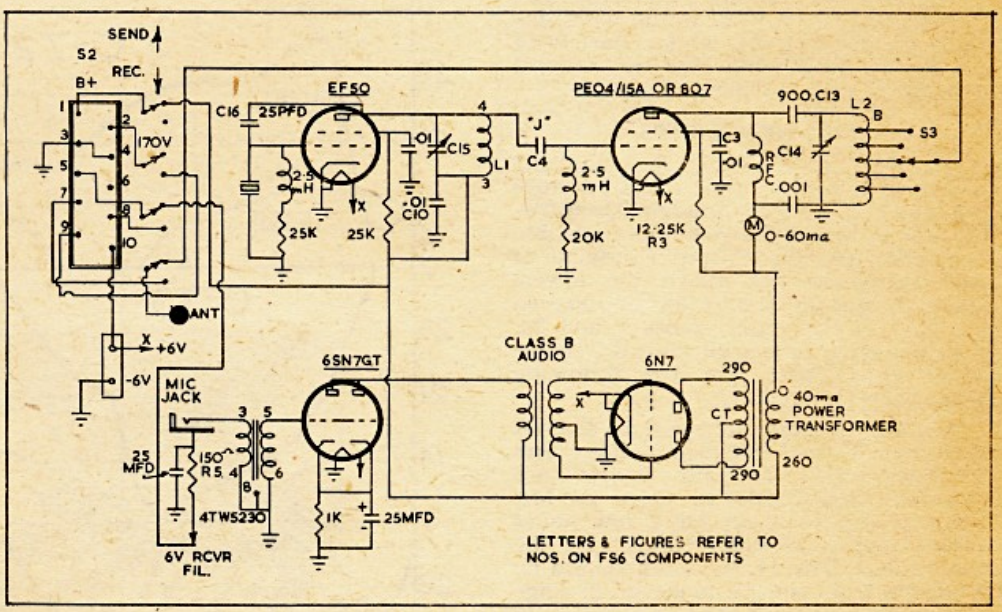


Fig. 1. Circuit diagram of modified FS6.

*20 Murray Street, Gawler, South Aus.

DX Countries of the World

The list of Countries as hereunder, and as amended from time to time in the Federal Notes, is the Official List to be used in connection with the issue of the Australian DX Century Club Award, and is also the official list as used by the A.R.R.L. for their award.

As many political and geographical boundaries are still to be finalised, it may be some time before a firm list of Countries is produced. As well as applying to boundaries, these above remarks apply equally well to Amateur prefixes, which seem to vary even more than the boundaries!

The list below shows first the Country, the Zone number in parenthesis (as used for the W.A.Z. Award), and the approved Amateur prefix. Those prefixes shown in parenthesis are either provisional or temporary and may be altered as the determinations of the Atlantic City Conference become authentic with the approval of those concerned.

Country	Prefix
Aden and Socotra Is. (21)	VS9
Afghanistan (21)	YA
Alaska and Pribilof (1)	KL7
Albania (15)	ZA
Aldabra Islands (39)	
Algeria (33)	FA
Andaman and Nicobars (26)	(VU5)
Andorra (14)	PX
Anglo-Egy. Sudan (34)	ST
Angola (36)	CR6
Antarctica (12, 13, 29, 30, 32, 38, 39)	KC4, (VK1)
Argentina (13)	LU
Ascension Island (36)	ZD8
Australia (29, 30)	VK
Austria (15)	(MB9) OE
Azores Islands (14)	CT2
Bahama Islands (8)	VP7
Bahrein Island (21)	VU7
Baker and Am. Phoenix (31)	KB6
Balearic Islands (14)	EA6
Barbados (8)	VP6
Basutoland (38)	ZS7
Bechuanaland Prot. (38)	ZS9
Belgian Congo (36)	OQ5
Belgium (14)	ON
Bermuda Islands (5)	VP9
Bhutan (22)	
Bolivia (10)	CP
Bonin and Volcano Is. (27)	
Borneo, Brit. Nth. (28)	VS4
Borneo, Neths. (28)	PK5
Brazil (11)	PY
British Honduras (7)	VP1
Brunei (28)	VS5
Bulgaria (20)	LZ
Burma (26)	XZ
Cameroons, French (36)	FE
Canada (2, 3, 4, 5)	VE
Canal Zone (7)	KZ5
Canary Islands (33)	EA8
Cape Verde Islands (35)	CR4
Caroline Islands (27)	
Cayman Islands (8)	VP5
Celebes and Moluccas (28)	PK6
Ceylon (22)	VS7
Chagos Islands (39)	VQ8
Channel Islands (14)	GC
Chile (12)	CE
China (23, 24)	XU (C)
Christmas Island (29)	ZC3
Clipperton Island (7)	
Cocos Island (7)	TI
Cocos Islands (29)	ZC2
Colombia (9)	HK
Comoro Islands (39)	
Cook Islands (32)	ZK1
Corsica (15)	(F)
Costa Rica (7)	TI
Crete (20)	SV
Cuba (8)	CM, CO
Cyprus (20)	(MD7) ZC4
Czechoslovakia (15)	OK
Denmark (14)	OZ
Dodecanese Is. (20)	(SV5)
Dominican Rep. (8)	HI
Easter Island (12)	
Ecuador (10)	HC
Egypt (and Canal Zone) (34)	(MD5) SU
Eire (14)	EI
England (14)	G
Eritrea (37)	(MD3, MI3)
Ethiopia (37)	ET
Faeroes, The (14)	OY
Falkland Islands (13)	VP8
Fanning Island (31)	VR3
Fiji Islands (32)	VR2
Finland (15)	OH
Formosa (Taiwan) (24)	(C3)
France (14)	F
Franz Josef Land (40)	
Fr. Equator Africa (36)	FQ
French India (22)	FN
French Indochina (26)	FI
French Oceania (31, 32)	FO
French West Africa (35)	FF
Galapagos Islands (10)	
Gambia (35)	ZD3
Germany (14, 15)	D (DA)
Gibraltar (14)	ZB2
Gilbert, Ellice and Ocean Is. (31)	VR1
Goa (Port. India) (22)	CR8
Gold Coast and Togo (35)	ZD4
Greece (20)	SV
Greenland (40)	OX
Guadeloupe (8)	FG
Guantanamo Bay (8)	NY4
Guatemala (7)	TG
Guiana, Br. (9)	VP3
Guiana, Fr. and Inini (9)	FY
Guiana, Neths. (Surinam) (9)	PZ
Guinea, Port. (35)	CR5
Guinea, Spanish (36)	
Haiti (8)	HH
Hawaiian Islands (31)	KH6
Honduras (7)	HR
Hong Kong (24)	VS6
Hungary (15)	HA
Iceland (40)	TF
Ifni (33)	
India (22)	VU
Iran (Persia) (21)	EP, EQ
Iraq (Mesopot) (21)	(MD6) YI
Ireland, Northern (14)	GI
Isle of Man (14)	GD
Italy (15)	I
Jamaica (8)	VP5
Jan Mayen Island (40)	
Japan (25)	J
Jarvis and Palmyra Is. (31)	KP6
Java (28)	PK
Johnston Island (31)	KJ6
Kenya (37)	VQ4
Kerguelon Is. (39)	
Korea (25)	HL
Kuweit (21)	
Laccadive Is. (22)	(VU4)
Lebanon Repub. (20)	AR8
Leeward Islands (8)	VPZ
Liberia (35)	EL
Libya (34)	(MC1, MD1, MD2, MT2)
Liechtenstein (15)	HE
Luxembourg (14)	LX
Macao (Port. China) (24)	CR9
Madagascar (39)	FB
Madeira Islands (33)	CT3
Malaya (28)	VS1, 2
Maldive Islands (22)	VS2
Malta (15)	ZB1
Manchukuo (24)	(C9) MX
Marianas Islands (27)	KG6
Marion and Prince Edward Is. (39)	(ZS2)
Marshall Islands (31)	KX6
Martinique (8)	FM
Mauritius (39)	VQ8
Mexico (6)	XE
Midway Island (31)	KM6
Miquelon and St. Pierre Is. (15)	FP
Monaco (14)	
Mongolia, Repub. (23)	
Morocco, French (33)	CN
Morocco, Spanish (33)	EA9
Mozambique (37)	CR7
Nepal (22)	
Netherlands (14)	PA
Neths. W. Indies (Curacao) (9)	PJ
New Caledonia (32)	FK
Newfoundland and Labrador (2, 5)	VO
New Guinea, Neths. (28)	PK7
New Guinea, Territory (28)	VK9
New Hebrides (32)	FU, YJ
New Zealand (32)	ZL
Nicaragua (7)	YN
Nigeria and Br. Cams. (35, 36)	ZD2
Niue (32)	ZK2
Norway (14)	LA
Nyasaland (37)	ZD6
Oman (21)	(MP4)
Pakistan (22)	AP
Palau (Pelew) Is. (27)	
Palestine (20)	ZC6
Panama (7)	HP
Papua Territory (28)	VK9
Paraguay (11)	ZP
Peru (10)	OA
Philippine Is. (27)	KA
Phoenix Is., Br. (31)	
Pitcairn Island (32)	VR6
Poland (15)	SP
Portugal (14)	CT1
Principe and Sao Thome Is. (36)	
Puerto Rico (8)	KP4
Reunion Island (39)	FR
Rhodesia, Nth. (36)	VQ2
Rhodesia, Sth. (38)	ZE
Rio de Oro (33)	
Roumania (20)	YR
Ryukyu Islands (25)	(J9) KR6
St. Helena Is. (36)	ZD7
Salvador (7)	YS
Samoa, American (32)	KS6
Samoa, Western (32)	ZM

(Continued on Page 16)

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The Quad Beam

BY A. GOLDIE,* VK2TG

This beam, also known as the Cubical Quad, is a two element beam with three very definite advantages:—

(i) A short boom.
(ii) Low angle of radiation.
(iii) Easy to feed.

The boom is 0.1 to 0.15 of a wave length long and from it are suspended two squares, held with the diagonals vertical and horizontal. These squares may be constructed of a wooden framework of 1½" x 2" lengths. Each side of the square is a quarter wave length for the driven element and a quarter wave length plus 10% for the director.

Two turns of wire are then wound round the square, the turns being spaced apart a distance depending on the gauge of the wire:

6 gauge wire—9" spacing;
10 „ „ —7" „
12 „ „ —6" „

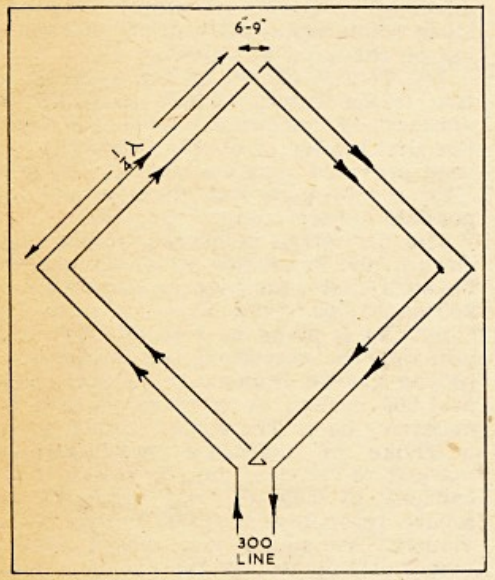

Fig. 1.

The two turns are connected to one another and the 300 ohm feeder as shown in Fig. 1.

The director is similar with two turns of wire with the same spacing relation as for the driven element. There are various methods of connecting the director loops as illustrated in Figs. 2 and 3. In each of these, the end of the first loop is connected to the beginning of the second loop (as in the driven element). In Fig. 2 across the beginning of the first loop and end of the second loop (where the feed line is connected on the driven element) are connected a

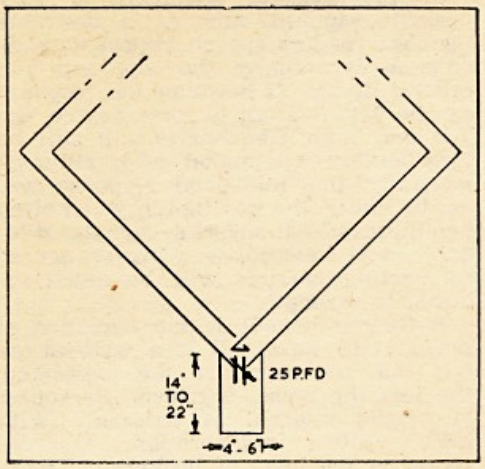

Fig. 2.

closed stub and a 25 pF. variable condenser. The length of the stub depends on the spacing of its wires, being 22" long for 6" spacing, and 14" long for 4" spacing. In Fig. 3 the loops are simply cross joined. The former scheme has the advantage of tuning the condenser for maximum front-to-back ratio.

The beam is essentially broad band, the loading remaining essentially constant from 27 to 30 Mc. for a beam designed for 28.5 Mc. It also will work on the second harmonic, i.e. a 14 Mc. beam would work well on 28 Mc.

NOTE.—There have recently been a number of articles on highly directional loop beams for direction finding in the 30 Mc. region. Although not the same as that described by VK2TG, they might have some interesting features for those wishing to experiment with compact beams. Four such articles are:—

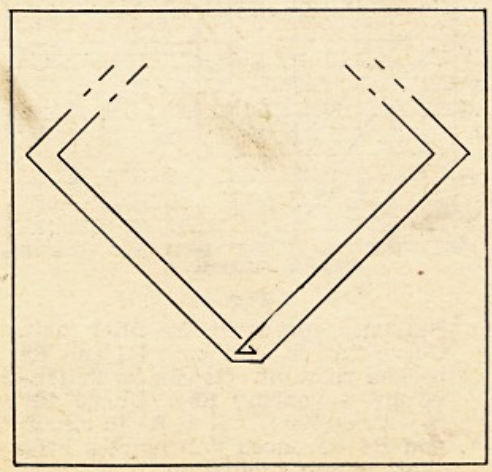

Fig. 3.

W. Ross "The Development and Study of a Practical Spaced Loop Radio Direction Finder;" journal of the Institute of Electrical Engineers 1947, vol. 94, part III. No. 28, p.p. 99-107.
F. Horner "An Experimental Spaced Loop Direction Finder," J. Inst. Elec. Eng. 1947, vol. 94, part III., No. 28, p.p. 126-133.
F. Horner "Properties of Loop Aerials," Wireless Engineer 1948, vol. 25, p. 254.
F. Horner "Spaced Loop Aerials," Wireless Engineer 1948, Vol. 25, p. 281.

—A.K.H.

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An Effective Audio Frequency Unit

BY J. N. WALKER,* G5JU

Because of the crowded state of many of the Amateur bands, methods of increasing the effective selectivity of a receiver always arouse interest. One method which has much to recommend it is the use of an audio filter, particularly since it is easy to apply, without necessarily interfering in any way with the receiver itself.

TYPES OF FILTER Filters can be designed to produce frequency/amplitude response curves having various characteristics. For Amateur use, two major types are of interest. One gives a very peaked response over a very narrow band of frequencies, situated in the region between 800 and 1,000 cycles. At such frequencies, the human ear develops maximum sensitivity, does not tend to become tired, and also to them many makes of the usual types of iron-diaphragm telephones show a peaked response. These factors add intelligibility to a c.w. signal, particularly if the latter is a weak one and is accompanied by interfering signals on higher or lower audio frequencies.

The second type of filter is more complicated. It is designed to pass, at a more or less uniform level, a band of frequencies between about 200 and 3,000 cycles, and to reject all frequencies above and below these figures. This pass band gives what is known as communication quality speech and results in increased intelligibility under conditions where interference is likely. It also has other applications—for instance, when included in the modulator portion of a transmitter, it ensures greater efficiency by preventing unwanted frequencies modulating the carrier.

The particular design described hereafter is of the first type but can also be applied, to some extent, to telephony reception.

BENEFITS OF A FILTER An audio filter can be used with any type of receiver, superhet, or t.r.f. It is of particular benefit with the t.r.f. type, since the latter is prone to suffer from lack of selectivity.

For c.w. reception, the note of the incoming signal is adjusted to correspond with the resonant frequency of the filter. Because of the special characteristics of the latter, it is then amplified to a considerably greater degree than other frequencies, with the result that interfering signals on other adjacent frequencies and possibly of originally greater strength, become much less prominent and are more easily "forgotten" by the ear.

In the case of telephony, a very peaked response, such as is desirable for c.w., renders speech almost unreadable, as is actually the case with the present design. If however the response can be flattened out to some degree, the low and high frequencies will still be considerably attenuated and, although naturally the mid-band response will not be linear, the intelligibility can often be improved. Interfering signals, sidebands and heterodyne whistles caused by beating carriers will be much reduced in strength.

A further benefit is the reduction of background noise. It is a well-known fact that the narrower the pass-band, the less the noise, whatever its source of origin, internal or external. With high positive regeneration, the decrease in the level of background noise is very noticeable.

The present design does three things. With the positive and negative feedback controls (more of these later) suitably adjusted, the unit becomes a straightforward amplifier, but with relatively increased amplification between roughly 500 and 1,500 cycles. In this condition, it has been found excellent for telephony reception. For better linearity, the output tuned circuit may be replaced by a high inductance choke. It may also be noted that if the input and output tuned circuits are replaced by resistances, the linearity can be made extraordinarily good.

Further adjustment of the positive feedback control, almost to the point of self-oscillation results in the steep response curve illustrated in Fig. 1. It is necessary for the receiver itself to possess good frequency stability or it will be difficult to hold the signal within the narrow pass-band of the filter.

The third use is an unusual one. With the positive feedback control well advanced, actual oscillation occurs and the output may be employed, after further amplification, to modulate a transmitter for m.c.w. transmission. It is very likely that this form of transmission will be called for on the new v.h.f. bands being allotted to Amateurs. The note produced is entirely suitable for the purpose.

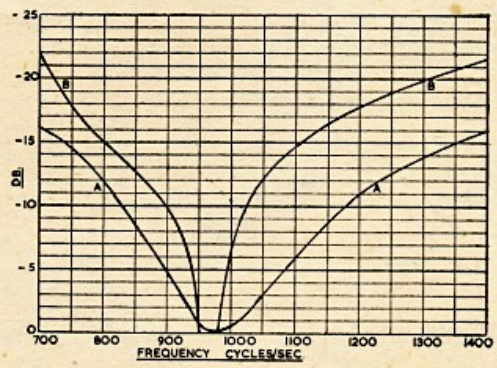

Fig. 1.

Response curves of the filter unit. Curve "A" is with both R4 and R5 backed right off. (It can be flattened by advancing R5). Curve "B" is with 80,000 ohms of R5 in circuit and R4 advanced to a point a little short of self oscillation.

POINTS ABOUT THE DESIGN The performance of a filter is related to the Q of the tuned circuit. Due to various factors (thin wire, iron core, external loading, etc.), it is impossible to achieve an inherently high value of Q. The selectivity curve is not as steep as one would wish and the performance is disappointing.

To attain the desired objective, it is necessary to enlist the aid of valves and introduce positive reaction to increase the apparent value of Q, at least of the input tuned circuit, to a really high value. At the same time, negative feedback is also introduced, to stabilise the action of the circuit and minimise the effect of variations of supply voltages, loads (both input and output) and ageing or changing of valves.

The Circuit, shown in Fig. 2, employs two triode valves, which may be of almost any medium impedance type. For that matter, a double-triode can be used provided separate cathode connections are brought out, thereby making possible a very compact unit.

The first stage includes a tuned grid circuit, the constants of which should be such that resonance occurs between 900 and 1,000 cycles. The value of C2 (and C7) is given as 0.01 uF., but this will only be correct if the choke employed has an inductance of 3 henries at 1,000 cycles. A word of caution is necessary here. The writer initially used a choke of unknown make plainly marked "3 henries," but, in fact, a total capacity of 0.05 uF. was necessary to secure resonance at 1,000 cycles. Obviously, something was wrong somewhere and on testing the choke, it was found to have an inductance between 2.5 and 3 henries at 50 cycles but only about 0.4 henries at 1,000 cycles, due presumably to magnetic leakage. Reliable make of choke should therefore be used. One of lower inductance than 3 henries can be employed, at a pinch, but the results will not be quite so good, because of the lower dynamic resistance. Experiment will then be necessary to arrive at the proper value of C2. These remarks apply also to the anode circuit of V2.

R1 is necessary to prevent a low impedance input source loading the tuned circuit to a degree which can alter the resonant frequency quite considerably. The R4/C3 combination introduces positive feedback—R4 should be wired so that clockwise rotation increases the

* Engineer, Technical Services Depart., Stratton & Co. Ltd., Birmingham, Eng., and published by special arrangement with the "Short Wave" Magazine.

amount of feedback. The negative feedback path is through C5 and R5 to the cathode of V1. In this case, clockwise rotation of R5 should decrease feedback (i.e. increase the resistance in circuit). No by-pass condenser must be connected across R2.

A tuned circuit, having constants identical to those of the input circuit, is connected in the anode circuit of V2 and assists in sharpening the response.

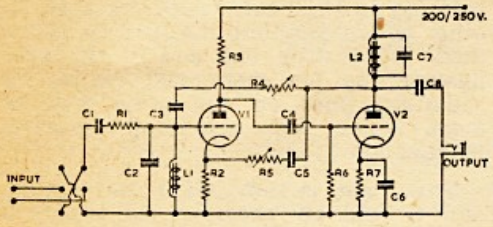

Fig. 2.—Circuit of the Filter Unit.

C1, C3, C4, C5—0.1 uF. paper.
C1, C7—0.01 uF. mica.
C6—50 uF. 12 v. electrolytic.
C8—0.5 or 1 uF. paper.
R1—47,000 ohms, ½ watt.
R2—3,000 ohms, ½ watt.
R3—100,000 ohms, ½ watt.
R4—0.5 megohm potentiometer.
R5—0.25 megohm potentiometer.
R6—247,000 ohms, ½ watt.
R7—1,000 ohms, ½ watt.
L1, L2—3 henries at 1,000 cycles Chokes.
V1, V2—L63, 6J5, 6C5, etc.
Switch—D.P. change over type.

It is assumed that the gain will be controlled in the receiver itself. No gain control should be fitted in the grid circuits of V1 and V2 or the operation as a whole will be upset. One can of course be fitted preceding R1 and can take the usual form of a 0.5 megohm potentiometer connected across the input jack or terminals, with the moving arm connected to R1.

CONSTRUCTION Little need be said about the construction. The unit is purely an audio frequency device (and a stable one at that) and liberties can be taken with the lay-out, wiring, etc., to suit the constructor's convenience. Since the two valve combination gives quite a degree of amplification, the filter can be built in as the audio part of a receiver, in permanent form.

As shown, the circuit is suitable for use with telephones—if loud speaker operation is desired, it will be necessary to add an output valve of the 6V6 type, the grid being fed from C8 (reduced in value to 0.1 uF.) via a 250,000 ohm gain control. Many receivers will already incorporate an output valve and, if there is no objection to the making of internal modifications, the filter can well be fitted in between the first audio stage and the output valve.

There is one point to watch—that the insulation resistance of the coupling/blocking condensers C1, C3, C4 and C5 is high—otherwise the valve operating conditions will be altered.

USING THE FILTER The input voltage will normally be taken from the telephone jack of the receiver and, in the case of commercial receivers, it should not be taken for granted that the sleeve is the "earthy" side of the telephone plug—in some receivers it may be the tip. This is the reason for the inclusion of the change-over switch which precedes R1—in many cases it may not be required.

In the first place, R4 (positive feedback) should be backed right off. With R5 (negative feedback) also backed off, the inherent gain will be evidenced by the strength of signals, noise level, etc. As R5 is advanced, the gain will progressively fall off. A setting of R5 such that about 100,000 ohms or somewhat less is in circuit will generally be found about right—the operation of the filter will be stable without too much loss of gain.

On advancing R4, at the same time tuning through a heterodyne beat note, it will become more and more noticeable that the tone correspond to 950/1,000 cycles stands out above other frequencies. Beyond a certain point (dependent on the degree of negative feedback), self oscillation will occur. When receiving c.w., R4 should be set a little short of this point. Too close an adjustment will give rise to "singing," rendering the incoming signals difficult to copy. For telephony, R4 should be backed off to the full extent, and R5 advanced if necessary—the additional negative feedback will tend to flatten out the response, but gain will be lost. The adjustment of R5 will therefore depend on reception conditions, strength of signal and the total amplification available external to the filter unit, so that no hard and fast rules can be given.

S.A.R.L. DX Contest, Jan., 1949

The South African Radio League has decided to hold its first post-war DX Contest in January this year, to further and foster the underlying principles of Amateur Radio. All members throughout the world are cordially invited to participate and share in the fun.

GENERAL

1. The Contest is open to licensed Amateurs throughout the world, and will be on c.w. only.

2. Contacts with or reports from ships or unlicensed stations located in countries where licenses are obtainable will not count for points. The decision as to whether a station is to be classed as unlicensed will rest with the S.A.R.L. DX Committee.

3. Only one person is allowed to operate a specific station for the duration of the Contest.

4. Certificates will be awarded to the first three DX stations, and to the first three Southern Africa stations who are members of the S.A.R.L.

Certificates also to the leading station in each Prefix Zone provided at least three entries received from that Zone.

5. All entry forms should be posted so as to reach Port Elizabeth **not later** than April 30, 1949, and should be addressed to **S.A.R.L. DX Contest, P.O. Box 462, Port Elizabeth, South Africa.**

6. The decision of the DX Contest Committee is final.

RULES

1. The Contest will extend from 0001 G.M.T. Saturday, 22nd January, to 2400 G.M.T. Sunday, 23rd January, and from 0001 G.M.T. Saturday 29th-2400 G.M.T. Sunday, 30th January, 1949.

2. Stations in the Southern Africa Zone must exchange six figure groups with stations in the rest of the world. The first three figures must be the signal report and the last three the self-assigned serial, e.g., 569333, 559807, etc.

3 (a). Southern Africa is divided into the following prefix zones: (1) ZS1, (2) ZS2; (3) ZS4, ZS7, ZS8; (4) ZS5; (5) ZS6, ZS9; (6) ZS3, ZE1, ZE2, VQ2, VQ3, CR7.

3 (b). The rest of the world will be divided into zones according to the official country prefix list, except in the case of: (a) U.S.A. and Canada, where each call district will be a separate zone, e.g., W1, W2, VE1, VE2, etc.; (b) Australia, where the zones will be: (1) VK2, (2) VK3, (3) VK4 and 7, (4) VK5 and 8, (5) VK6 and 9.

4. **Bands.**—The 80, 40, 20, and 10 metre Amateur bands may be used.

5. **Scoring.**—20 points for the first contact, 19 points for the second, 18 for the 3rd, and so on down to 1 point for the 20th contact, and 1 point for each contact thereafter, **in each zone.** The same method applies to each band used.

6. Only one contact with a specified station may be made on each band during each week-end of the Contest; stations worked during the first week-end may be contacted again during the second week-end.

7. Band monitoring stations, under the auspices of the S.A.R.L. will be active and any station reported off frequency will be disqualified.

8. **Logs** should show the following: (a) Date, (b) Time—G.M.T., (c) Band, (d) Serial In, (e) Serial Out, (f) Station Worked, (g) Points Claimed. An analysis sheet for each band should accompany entries: (a) Prefix Zone, (b) Contacts—number, (c) Points.

RECEIVING SECTION

This section of the Contest is confined to non-transmitting members of the S.A.R.L. resident in Southern Africa.

Using the VK3WI Standard Frequency Transmissions

BY J. DUNCAN,* VK3VZ, AND R. JEPSON,† VK3JI

The Standard Frequency Transmissions broadcast over VK3WI have not been used much by Members, and it is felt by T.A.C. that this is due to unawareness of the value which this service can be to the Amateur.

It is quite common to visit a Ham shack, and see a well constructed v.f.o., stable, and with all necessary temperature compensation and voltage regulation carried out, and which lacks one of the most essential requirements of all—an accurately calibrated dial. It seems a pity that a v.f.o., upon which many hours of work has been spent, should be left incomplete, when for the addition of a few hours extra work, a dial, calibrated directly in terms of frequency, would complete the job.

The usual excuse when this question is asked is "How am I going to calibrate a dial, when I get it fitted?" The answer to that one is obvious, "use the Standard Frequency Transmissions provided for just such a job by the W.I.A." After the job has been completed, it is an easy matter to check the calibrations on future Transmissions.

There are at present, at least two commercially made dials available with dial cards left blank for caibrating purposes, and if these are not suitable, it is not difficult to make one. The main requirement is to obtain a suitable planitary reduction drive, which is capable of taking the calibrated dial.

CONSTRUCTION OF CALIBRATED DIAL

The dial can be constructed from white celluloid, cut to the correct diameter with a pair of scissors, after marking clearly with a pair of dividers. The hole in the centre should be drilled, firstly with a small drill, and secondly with a larger morse drill of the required size. If wood centre bits are on hand they can be used to make a clean hole.

The shiny surface on which the calibrations are to be drawn is removed by rubbing with fine glass paper, using a circular motion to avoid scratches. It will be found that drawing ink will "take" to this surface just as well as it would do on drawing paper.

The final job is to fit a clear celluloid cursor to the front panel of the instrument on small metal pillars, the hairline on the cursor being made by scratching the surface of the celluloid with a sharp knife held against a straight edge, and filling the scratch with Indian ink. Reference to August, 1947, "Amateur Radio" will show an illustration of a dial made on these lines.

It may be considered simpler to cut the white celluloid into a half circle, fix it to the front panel with screws, and use a transparent celluloid pointer moving over the scale; in any case whichever method is adopted, the job is easily accomplished. The most essential requirement being that the calibrated scale be incapable of slipping, and that after the calibration points have been drawn in ink, it can be fitted back onto the v.f.o. in exactly the same place as before. This point cannot be stressed too strongly.

To enable accurate calibration points to be transferred to the scale surface, a small hole should be pricked in the hairline on the cursor, large enough for the sharp point of a lead pencil to be inserted. If more than one band has to be calibrated, a series of holes are drilled equal to the bands required, and the spacing between the holes along the hairline should be so arranged that there will be sufficient room for both calibration and figures.

When the calibration has been completed, we will have a series of pencil dots in concentric rings on the white celluloid dial, with a few light pencil figures marking say 7, 7.1, and 7.2 Mc. if the v.f.o. is on 7 Mc. band; if the v.f.o. is operating on a fundamental frequency of 3.5 Mc., we would also mark at the same time the 3.5, 3.55, and 3.6 Mc. points on the appropriate scale. Additional harmonic scales for 14 Mc. and 28 Mc. are also suggested, to save having to do mental arithmetic when operating on the higher bands.

Our scale would now have 5 Kc. points on 3.5 Mc., 10 Kc. points on 7 Mc., 20 Kc. points on 14 Mc., and 40 Kc. points on 28 Mc., if the calibration was made on the 7 Mc. band.

DRAWING OF THE SCALES

The scale is now removed ready for inking, and it is important at this point to mark the panel or shaft in some way so that the scale can be refixed in exactly the same position.

Fix the scale to a piece of softwood with drawing pins inserted through any suitable holes in the scale, or if there are none, the drawing pins should be inserted alongside the scale with a small piece of paper under them to prevent marking the scale. As the centre point of our scale has been drilled out to take the condenser shaft, it will be necessary to find this point. A pencil compass is adjusted to the approximate position of the centre and extended to touch the ring of calibration dots, and by varying the spread of the compass and altering the position of the point slightly. a point will be found where the circle will just touch the inside edge of the calibration dots throughout the complete half circle. We have now found the correct centre and the compass point should be pressed into the softwood to fix it.

Draw in the circular scale with the pencil compass, and also the 10 Kc. lines by using a rule and a large pin inserted in the centre compass hole, in other words complete the scale in pencil first. By resting one end of the rule against the pin mentioned above, all radiating lines on the scale will be even, which will give a professional looking job.

The scale is now ready for inking, and it will be necessary to obtain a drawing pen and compass, and some waterproof Indian ink; a friend can usually be found who can oblige in this direction. To fill a pen of this type, dip an ordinary pen in the ink and insert it between the prongs of the pen, the ink will run in and remain. The thickness of the line should be now tested on a piece of paper, and set by the adjusting screw.

After the scale has been inked the figures should be drawn, and it is here that the true test comes. If you are particularly good at lettering, a satisfacory job can be done with a mapping pen, but have some practice first on odd pieces of paper. If you want a perfect commercial looking job, purchase a lettering stencil.

A well known type is the "UNO" lettering stencil, and is used for most of the drawings for this magazine. A typical example of the lettering done with this stencil is in the drawings of the hydraulic beam rotator, November issue. The writer has also used these stencils for marking grey crackle finish front panels, and they can be recommended to those who like to make their gear look something.

The most suitable size for scales is the No. 0 pen and UC 1½ stencil for lettering, and UF 1½ for figures, the complete set costing about 18/-, complete with pen holder.

After the figures and letters have been completed the scale should be allowed to dry for a few hours, and then all pencil marks cleaned off with a very soft rubber. The completed scale can now be refixed to the v.f.o., and from then on you will be able to see where you are, without having to consult calibration graphs, which somehow never seem to be about when you want them.

Although a v.f.o. has been mentioned in the above description, the same principles apply, obviously, to Frequency Meters and Receivers, all of which can be improved with a direct reading dial.

(Continued on Page 16)

* Technical Editor, 23 Parkside Ave., Balwyn.

† 12 Camden Street, St. Kilda, S.2.

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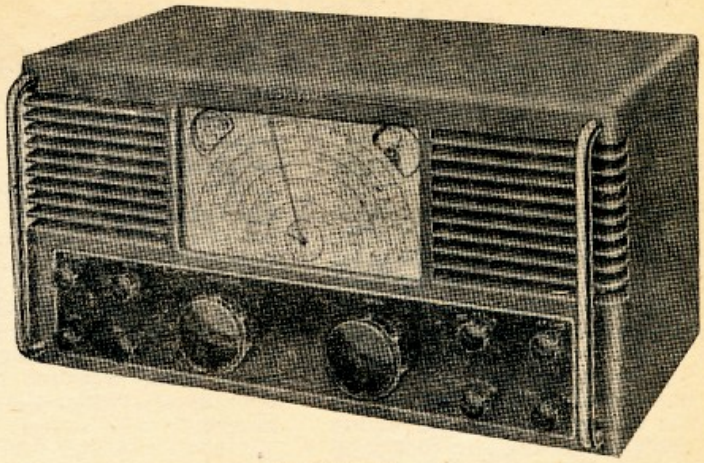
MODEL 504



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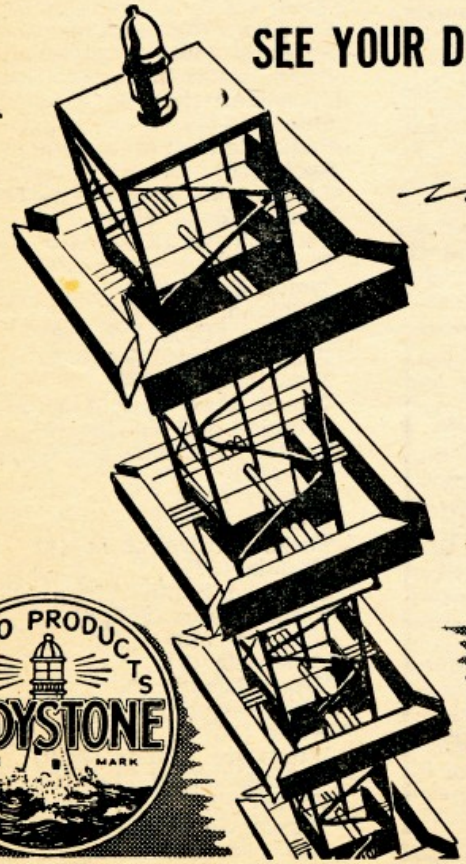

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Improving Stability of Type 3 Mark II

BY H. STEVENS,* VK3JO

Following the installation of an 807 in place of the 6L6 p.a. in accordance with directions given by 3TO in Dec. 1947 "A.R.," some difficulty was encountered in attempting to neutralise the p.a.

Using conventional neutralising methods, it was not possible to achieve complete stability. Although without plate and screen voltage on the tube the grid current did not vary when the p.a. tank was tuned through resonance, but when plate and screen voltages were applied and the rig tuned up, the r.f. output appeared undiminished when the crystal was removed from its socket. Removing the EL32 from its socket, the following effects were noted.

When neutralised (by means of the conventional grid current method) the 807 showed no signs of any sort of oscillation, whereas without the neutralising condenser or incorrect adjustment of it caused self oscillation. These same effects occurred when the EL32 was plugged in but with its plate and screen supply disconnected.

Tuning the rig up again and removing the crystal produced the same result as already mentioned, but shorting the grid of the EL32 to earth stopped it. Realisation at last dawned! The EL32, not the 807, was the culprit, feed back being introduced by stray coupling between the plate of the 807 and the grid of the EL32. A shield between these two tubes confirmed this and on removing the crystal from its socket, the set is completely dead. These effects were noted on 3.5, 7, and 14 Mc. using 3.5 and 7 Mc. crystals, and this, together with the fact that a shield between the two tupes cured the trouble, proves that the EL32 itself was not oscillating of its own accord when the crystal was removed.

For those not familiar with the Type 3 Mark II., it is pointed out that these two tubes are mounted very close together—right alongside each other in fact. With the original p.a. tube this trouble should not occur and for the home constructor the foregoing presents a useful design hint—don't overcrowd your stages. The all important shield can be readily mounted on the transmitter case, care being taken to see that when in its normal position the shield does not make contact with the terminal strips mounted near the front panel.

* 33 Auburn Grove, Hawthorn, E.3.

USING VK3WI TRANSMISSIONS

(Continued from Page 14)

TIMES AND METHOD OF THE TRANSMISSION

The times and method of transmitting the Standard Frequency Transmissions are as follows:—

Times.—The transmissions will take place at three monthly intervals, and are listed in "Amateur Radio."

Dates for the next 12 months are:—
26th January,
28th April,
22nd July,
22nd October.

Transmissions take place on the 7 Mc. band at intervals of 10 Kc., the frequency of the transmissions being accurate to better than 0.01% or 500 cycles.

The operating procedure and times of transmission being as follows:—

7.50 p.m.—Phone transmission on 7196 Kc. with a general call and information on what is about to take place.

7.55 p.m.—VK3WI shifts frequency to 7,000 Kc., and calls as follows on c.w. at 12 w.p.m.:—S.F.T. (Standard Frequency Transmissions) 3 times de VK3WI (3 times), then —...— QRG —...— 7,000 Kc. (twice). The key is then held down for one minute; then QSY 7010 Kc. (twice) de VK3WI (once) AR.

The transmitter then commences operation on 7,010 Kc., and the procedure is repeated until 7,200 Kc. is reached.

If the hour is not too late frequency checks will then be made for any Member contacting VK3WI.

In obtaining an exact zero beat against the Standard Transmission, an "R" meter is very useful, as the needle will show a slow pulse when the v.f.o. and Standard Frequency are almost zero beat. If there is any likelihood of interference blanketing out a check point, a graph can be drawn and the missing point obtained with quite good accuracy.

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 20th January, 1949. Lectures are held on Monday and Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with the Secretary W.I.A. Victorian Division, 191 Queen Street, Melbourne (Phone FJ 6997 from 9 a.m. to 5 p.m.), or the Class Manager on either of the above evenings.

DX COUNTRIES OF WORLD

(Continued from Page 9)

San Marino (15)	(CZ)
Sarawak (28)	VS5
Sardinia (15)	IS
Saudi Arabia (21)	HZ
Scotland (14)	GM
Seychelles Is. (39)	VQ9
Siam (26)	HS
Sierre Leone (35)	ZD1
Sikkim (22)	(AC3)
Solomon Islands (28)	VR4
Somaliland, Br. (37)	(MD4) VQ6
Somaliland, Fr. (37)	FL (MD4)
Somaliland, Ital. (37)	(MD4)
South Georgia (13)	VP8
South Orkney Is. (13)	VP8
South Sandwich Is. (13)	VP8
South Shetland Is. (13)	VP8
Southwest Africa (38)	ZS3
Soviet Union:—	
European S.S.R. (16)	UA
Asiatic S.S.R. (17, 18, 19)	UA9, 0
Ukraine S.S.R. (16)	UB5
White Russia (16)	UC2
Azerbaijan (21)	UD6
Georgia (21)	UF6
Armenia (21)	UG6
Turkoman (17)	UH8
Uzbek (17)	UI8
Tadzhik (17)	UJ8
Kazah (17)	UL7
Kirghiz (17)	UM8
Karelo-Finnish (16)	UN1
Moldavia (16)	UO5
Lithuania (15)	UP2
Latvia (15)	UQ2
Estonia (15)	UR2
Spain (14)	EA
Sumatra (28)	PK4
Svalbard (40)	
Swan Island (8)	KS4
Swaziland (38)	ZS8
Sweden (14)	SM
Switzerland (14)	HB
Syria (20)	AR1
Tanganyika Territory (37)	VQ3
Tangier Zone (33)	EK
Tannu Tuva (23)	
Tibet (23)	AC4
Timor, Port. (28)	CR10
Togoland, Fr. (35)	FD
Tokelau (Union) Is. (31)	
Tonga (Friendly) Is. (32)	VR5
Transjordania (20)	ZC1
Trieste Free Terr. (15)	MF2
Trinidad and Tobago (9)	VP4
Tristan de Cunha and Gough Is. (38)	ZD9
Tunisia (33)	FT
Turkey (20)	TA
Turks and Caicos Is. (8)	VP5
Uganda (37)	VQ5
Union of South Africa (38)	ZS
United States (3, 4, 5)	K, W
Uruguay (13)	CX
Venezuela (9)	YV
Virgin Islands (8)	KV4
Wake Island (31)	KW6
Wales (14)	GW
Windward Islands (8, 9)	VP2
Wrangel Island (19)	
Yemen (21)	
Yugoslavia (15)	YU
Zanzibar (37)	VQ1

Oh Lord, Our Help in Ages Past!

BY "OLD HOMBRE"

Freedom of speech is one of the tenets of Democracy—most of us fought to preserve it along with other privileges a little while ago. But freedom of speech **can** be a bit overdone, an unpleasant fact that is obvious in the world of Amateur Radio, especially after listening to some of the 7 Mc. "gang." The other bands are not immune.

The present-day urge seems to be toward speech in quantity rather than in quality—not so much a technical consideration, but one involving what we, of British stock, like to style as "The King's English."

One wonders if many of those who consistently and persistently mutilate grammar over Amateur radiophone channels **do** realise that theirs is no session "in camera," and that anybody can listen; that broadcast listeners with short-wave bands on their receivers can and do sit back in virtual judgment?

Much of the jarring drivel that thus becomes public property via Amateur microphones is doing extensive damage to the status of the Radio Amateur; his stocks are by no means rising, and it is of no use emulating the ostrich and hiding our heads in the sand about it. Many of the undesirable features were with us in pre-war days, but now they are accentuated and "snowballed" increasingly by individuals with movie-inspired "smart aleck" mentalities.

Frequent interpolations of the morse abbreviation denoting mirth are such as to arouse a feeling of distaste, to say nothing of moronic requests for a symbolic indication of christian name—but these are minor faults compared to some. Nevertheless, it is now almost a source of wonderment why it is seemingly impossible for some Amateurs to carry on or to conduct a conversation unless their insistent clamour for a "handle" is immediately gratified.

Many years ago Amateur Radio became characterised by telegraphic abbreviations, adopted from commercial operating practice as a convenience, not a necessity. For the purpose intended, Q calls and other abbreviations serve good purpose; but when injected into speech in overdoses they strike a discordant note. They are just as much off-tune as the lad who smothers a verification card with a mass of "radioese." Letters and cards written in the "Mni tnx fer QSO OM es cu agn—hi" style are not pretty; nor is such microphone jargon as "OK old man about my sigs being OK over there, what's your handle?; the handle here is Alec—A for America, L for Louisiana, E for England" (etc.) and the "kewteehaitch" here is the little one mule town of Waspville" Ad lib.

The alternatives to these practices? Simple in the extreme—to write fully without resorting to crazy-reading telegraphic condensations, and to speak sensibly. For both facilities, schooling should have been responsible, but of course there are always the "no-hopers" in any place of learning. Unfortunately Amateur Radio appears to have attracted more than a surfeit.

Another pest that would cause less trouble by stamp-collecting or something is he who **will** leave a microphone "open" whilst attending to sundry affairs around the place, whistling the while exerpts from "McNamara's Band" or attempting dismally to emulate Crosby. Then Sadie or Penelope or somebody equally dis-interested in the Amateur side of Radio is asked to burble small-talk, or repartee with somebody in the next room is indulged in.

This kind of outrage persists oft-times on a would-be DX band, and with all of 100 watts to convey it to another less than a mile distant. That recipient invariably comes back with "Roger, Roger Dodger, all one hundred per cent., Sadie came over good-oh but there was er bitter feedback when youse was on, yer 'mojerlasheeun's down a bit'."

Amazing does it seem to many that the P.M.G. actually licenses people to do this kind of thing, for, the Lord knows, it is about all some of them appear to do. The plain fact is that it behoves Amateur Radio everywhere to take stock of itself and do some spring-cleaning. This hobby is one which should be jealously safeguarded for future welfare, and indeed survival, for Amateur Radio exists in most countries by privilege alone and not in any sense by Rights.

STATION DESCRIPTION.

VK2VW KINGSFORD

Like most other Ham stations the equipment has undergone many stages of rebuilding, but is now operating fairly satisfactorily. Three separate transmitters are used, one covering 40, 20 and 10 metres; one for 6 metres, and a converted SCR522 for 144 Mc. The multi-band job is a five stage, crystal or VFO controlled unit with an 813 in the final, modulated by a pair of 809s Class B. Input is 100 watts on all bands. The 50 Mc. transmitter is also a five stage job using a 100TH in the final with an input of 100 watts.

Power supplies and modulator are common to both these transmitters and can be switched to either as required. All transmitters, power supplies, etc., are housed in two six foot standard racks and full push button remote control is provided by means of interlocking relays.

Besides the usual mess of papers and cigarette ash, the operating table carries three receivers, a twelve tube all-band superhet. with crystal filter, a 14 tube superhet for 50 Mc. and a 14 tube superhet for 144 Mc. The receivers are mounted in a small rack and beside them is a unit containing sub-modulator, with AMC, tone oscillator and modulation indicator. Another small cabinet contains remote control push buttons and associated interlocking relays.

Separate aerials are used for each band. The 20 and 40 metre radiator is a 36 foot dural mast which gives excellent results on DX. A half wave doublet operates on 10 metres and two four element beams operate on 50 and 144 Mc.

S.O.S. SPECIALS

Collins V.F.O. Units, 10 to 80 metres calibrated... ...	£26	10 0
IN34 Sylvania Germanium Crystal Diodes	1	5 0
National 50 P.F. Isolantite Variable Condensers		5 0
6AK5 Valves ...	1	10 0
S.O.S. Universal Stroboscopes ...		9
I.R.C. Resistoguide...		1 0
Ohmite Ohms Law Calculators ...		2 6
465 Kc. I.F. Crystals	1	19 6

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FEDERAL, QSL and DIVISIONAL NOTES

Federal President.—W. R. Gronow, VK3WG; Federal Secretary.—W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary.—Dick Dowe (VK2RP), Box 1734, G.P.O., Sydney.

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor: H. F. Treharne, VK2BM, 5 Waimea St., Burwood.

Zone Correspondents.—North Coast and Tablelands: P. A. H. Alexander, VK2PA, Hill St., Port Macquarie; **Newcastle:** E. J. Baker, VK2FP, 13 Skelton St., Hamilton, Newcastle; **Coalfields and Lakes:** H. Hawkins, VK2YL, 27 Comfort Ave., Cessnock; **Western:** G. J. Russell, VK2OA 116 Bogan St., Nyngan; **South Coast and Tablelands:** R. H. Rayner, VK2DO, 42 Pettit St., Yass; **Southern:** E. N. Arnold, VK2OJ, 673 Forrest Hill Ave., Albury. **Western Suburbs:** A. C. Pearce, VK2AHB, 48 Harrabrook Ave., Five Docks. **Eastern Suburbs:** H. Kerr, VK2AX, No. 4 Flat, 144 Hewlett St., Bronte **North Sydney:** L. D. Cuffe, VK2AM, 779 Military Rd., Mosman. **St. George:** J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton. **South Sydney:** V. H. Wilson, VK2VW, Cr. Wilson St. and Marine Pde., Maroubra.

VICTORIA

Secretary.—C. C. Quin, VK3WQ.

Administrative Secretary.—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.1.

Meeting Night.—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents.—North Western: B. R. Mann, VK3BM, Quambatook; **Western:** C. C. Waring, VK3YW, 12 Skene St., Stawell; **South Western:** B. Sectrine, VK3BI, 17a Raglan Street North, Ballarat; **North Eastern:** J. A. Miller, VK3ABG, "Erinvale," Avenel; **Far North-Western Zone:** Harry Dobbyn, VK3MF, 42 Walnut Ave., Mildura; **Eastern Zone:** J. D. Chilver, VK3DI, 20 Smith St., Leongatha.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7196 Kc. and 2000 hours EST, 50.4 Mc. No frequency checks available from VK2WI. Intra-State working frequency, 7175 Kc.

VK3WI.—Sundays, 1130 hours EST 7196 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0930 hours EST simultaneously on 3750 Kc., 7190 Kc., 14.342 Kc., 52.4 Mc. and 144.138 Mc. Frequency checks are given two nightly weekly, and the times are announced during Sunday broadcasts. 7010 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 query service to 4WI.

VK5WI.—Sundays, 1000 hours SAST on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Sat 2 p.m. Sun. 9.30 a.m. W.A.S.T. between 7000 kc. and 7200 kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1030 hours EST on 7174 Kc. No frequency checks are available.

QUEENSLAND

Secretary.—G. G. Augustesen, Box 638J, G.P.O. Brisbane.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City.

Divisional Sub-Editor: F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Secretary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide.

Divisional Sub-Editor.—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary.—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Place.—Padbury House, Cnr. St. George's Ter. and King St., Perth.

Meeting Night.—Watch the Monthly Bulletin.

Divisional Sub-Editor.—VK6WT, Mr. D. Couch, Mary Street, Watermans Bay, W. Australia.

TASMANIA

Secretary.—J. Brown, VK7BJ, 12 Thirza St., Newtown, Telephone: W 1328.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liverpool St., Hobart.

Divisional Sub-Editor.—T. Connor, VK7CT, 385 Elizabeth St., Hobart.

Northern Correspondent.—C. P. Wright, VK7LZ, 3 Knight St., Launceston.

FEDERAL

DX C.C. LISTING

PHONE

Nil.

C.W.

	Zones	Countries
VK3CN (3)	39	125
VK3BZ (14)	39	121
VK3EK (10)	38	117
VK3VW (12)	39	117
VK2EO (7)	40	116
VK4DA (20)	38	113
VK2QL (13)	40	112
VK4HR (22)		102

OPEN

	Zones	Countries
VK3BZ (5)	39	148
VK2DI (2)	40	145
VK3KX (1)		136
VK3HG (4)		131
VK3JE (18)	39	123
VK6RU (11)	36	121
VK4HR (9)		118
VK3MC (6)		117
VK4EL (16)	40	113
VK6KW (19)		108
VK2YL (17)		106
VK2ACX (8)	40	100
VK2AHA (15)	40	100
VK2ADT (21)		100

Figures in parenthesis indicate membership number to the DX C.C.

ANNUAL FEDERAL CONVENTION

The Annual Federal Convention will be held during the Easter period this year in Melbourne. As the preparation of items for the Agenda must be put in hand early so that all Divisions will have an opportunity to discuss them, now is the time to send in that item of contention that you have been thinking about. Let your Divisional Council have your item in plenty of time to submit it for inclusion in the Agenda. We are hoping this year to have a really original Agenda without those "hardy annuals" that always seem to reappear from year to year.

LIST OF DX COUNTRIES OF THE WORLD

As a result of many requests, we are including elsewhere in this issue the up-to-date List of DX Countries of the World, including Zones and Prefixes. We trust this will assist the DX gang, and hope in future to re-publish this List every January. Amendments will be included in these Notes from time to time as thy occur.

W.A.S. ON 50 Mc. RULES

As it is understood that Federal Executive will be making their first issue of a W.A.S. (Australia) Certificate in the near future for 50 Mc., it is hoped to publish the necessary details in the next issue.

W.A.P. AWARD

Details of a new award, the Worked All Pacific (W.A.P.) have been announced and will be published in the next issue. Watch for the details of this difficult-to-come-by Award.

SUB-DIVISION OF AMATEUR BANDS

From the Radio Club of Argentina comes news that it has been agreed by that Society to subdivide their 7, 14, and 28 Mc. bands between phone and c.w. as follows:—

7000—7050 Kc. c.w.
7050—7075 Kc. phone and c.w.
7075—7300 Kc. phone.
14000—14100 Kc. c.w.
14100—14150 Kc. c.w. and phone.
14150—14400 Kc. phone.
28000—28100 Kc. c.w.
28100—28150 Kc. c.w. and phone.
28150—30000 Kc. phone.

It is becoming increasingly apparent throughout the various countries of the world that something must be done regarding our DX bands. While some countries are making these divisions compulsory, the W.I.A. feels that a "gentleman's agreement" must be given a fair trial. To this end, the last Convention agreed to a plan on this basis. The following frequencies were those decided on:—

3500—3550 Kc. c.w. only.
7000—7030 Kc. ,, ,,
14000—14100 Kc. ,, ,,
21000—21100 Kc. ,, ,,
28000—28100 Kc. ,, ,,

It behoves every Amateur to remember the other fellow when operating, espcially on the main DX bands, and if this agreement is voluntarily successful, there will be no necessity for the W.I.A. to be as drastic as some of our fellow Societies have been. It is up to the individual to do his part, so give it a try and see how much more pleasant our operating can be without restrictions.

COMMERCIAL INTERFERENCE

The first list of off-frequency commercial stations logged in our bands has been sent to the appropriate authorities. In order that this may be a continuing function of F.E. to supply these details, please make a note of that commercial you have been hearing and send the relevent details (as full as possible) to the Federal Secretary without delay.

AUSTRALIAN AMATEUR CALL SIGNS

New Issues:—

VK2ADO—D. Batley, 2 Myra Ave., Ryde, N.S.W.
2AGG—H. Jones, 15 Council St., Speers Point.
2AGN—G. E. Nixon-Smith, 15 Badham Ave., Mosman.
2AKC—Kingsford & District Amateur Radio Club, 48 Rainbow St., Kingsford, N.S.W.
2AOX—H. Cox, 41 Rixon's Pass, Woonona.
2ARU—F. N. Sizemore, 22 Tweedmouth Ave., Rosebury.
2ARY—H. G. Hine, Hyde St., Bellingen.
2ATL—T. L. Somers, 2 Ingham Ave., Five Docks.
2ASP—S. J. Parr, Flat 4, 28 The Crescent, Manly.
2AWP—W. G. Coward, Comilaroy Station, via Mungindi.
2HE—H. W. Ralfs, 19 Dudley St., Coogee.
2KC—R. A. Catmur, 2 de Quincey Rd., Ballaburra.
2PB—M. T. Smith, 11 Bridge St., Lane Cove.
2XY—N. B. Hansen, 17 Fifth St., Lambton.
VK3ABK—R. J. Heighway, 57 High St., Geelong West, Vic.
3ACL—E. J. B. Andrew, "Riccida Orchard," Red Hill.
3ADC—D. Charlton, 12 Stevedore St., Williamstown.

3AEM—A. E. Moralee, 84 Reynolds Pde., Pascoe Vale South.
3AGM—G. M. Campell, 37 Essex Rd., Surrey Hills.
3AJZ—A. J. Zarth, 443 Waverley Rd., North Carncgie.
3ALB—L. W. Bennie, 36 Bowen St., Oakleigh.
3ALC—D. J. Brennan, "Edelweiss," Buangor.
3ALQ—D. McKenzie, 10 Chambers St., Footscray.
3AMS—A. M. Smallwood, 72 Merton St., Albert Park.
3AMW—M. E. Williams, 8 Grey Court, Coburg.
3ARS—R. C. Stephens, Albert St., Trentham.
3ARY—R. E. Yeates, 4 Jennings St., Moonee Ponds.
3EI—J. Allan, 9 Sweeney St., Ballarat East.
3ZO—N. L. Storck, 4 Parliament Place, East Melbourne.
VK4KT—S. A. McMurtie, Maryborough Rd., Gympie, Queensland.
4SY—S. G. Symons, 38 Stokes St., Townsville.
VK5BB—H. A. Behenna, Mitchell St., Crystal Brook, S.A.
5CO—R. C. Treson, Aeradio Station, Mount Eba.
5FS—L. F. Sawford, 14 Brook Ave., Glen Ormond.
5KW—E. B. Davis, 12 Surrey St., Grange.
5LF—R. J. Sanders, 2 Olive Ave., Cottonville.
5SL—L. N. Sjobery, "Wandeen" Guest House, Berri.
5SU—F. M. Gray, 52 Ormond Gve., Toorak Gardens.
5ZO—F. D. Wilkinson, 447 Esplanade, Henley Beach.
VK6DU—W. A. J. Du Feu, 20 Walker Ave., West Perth, W.A.
6GL—Lt-Col. B. G. Thompson, X-Ray Dept., General Hospital, Hollywood.
6RC—R. G. A. Coghlan, 88 Rokely Rd., Subiaco.
6WX—M. G. Haynes, 4 Leonard St., Victoria Park.
VK7HY—H. M. Yeates, 47 George St., Launceston, Tasmania.
VK9FD—F. Don, c/o. D.C.A., Norfolk Island.
9FJ—H. C. James, O.T.C. Radio Station, Madang, New Guinea, T.P.N.G.
9GM—G. E. Meaton, Norfolk Island.
9LW—E. J. Pascoe, S.D.A. Mission Headquarters, Inus, Bougainville, T.P.N.G.

Cancelled:—

VK2HE, 2KC, 2NE, 2PB, 2XY.
VK3ADI, 3AJY, 3APD, 3KU.
VK4HW, 4IM.
VK5AF, 5GP, 5KN, 5ZN.
VK6FK, 6GW, 6QF.
VK7PW.

Alterations:—

VK2ACR—W. J. Hart, 42 Botanic Rd., Mosman, N.S.W.
2AGT—J. K. Langley, 29 Fourth St., Ashbury.
2AHY—H. E. Quilty, 130 Hastings Pde., North Bondi.
2AKY—S. J. K. Adshead, Byng St., Holbrook.
2BJ—W. A. Easterling, 16 St. Peters St., St. Peters.
2QC—J. L. Carter, 132 Madeline St., Balfield.
2XE—F. G. Melvan, Delgarno St., Coonabarabron.
2XW—A. J. Voysey, 342 Stoney Creek Rd., Kingsgrove.
VK3ADA—J. B. Jarmen, 192 Buckley St., Essendon, Vic.
3ADL—B. E. Matheson, O.T.C. Radio Station, Fiskville, via Ballan.
3AZO—J. A. Cunliffe, 21 High View Rd., East Preston.
3HZ—E. M. Clyne, 99 Corio St., Shepparton.
3IU—T. J. Coakley, 5 Lincoln Rd., Essendon.
3OK—J. T. Pease, 47 Station St., Camberwell.
3UQ—N. G. R. Foxcroft, 181 Victorian Rd., Northcote.
VK4AD—E. P. Black, c/o. Radio Station 4RO, Rockhampton, Qld.
4CI—A. J. Forbes, 144 Boveen Tce., New Farm.
4KP—N. J. Mitchell, Octantis St., Coorparoo.
VK5IQ—F. R. Treharne, 3 Birdwood Close, Plympton, South Australia.
5LL—G. H. Lucas, 15 Augusta St., Maylands.
5RZ—A. L. Nestrom, 48a The Broadway, Glinely.
VK6BJ—K. M. Bunn, D.C.A. Aerodrome, Geraldton, W.A.
6SR—Radio Society of W.A. Inc., 49 William St., Perth.
VK7GC—G. P. D. Clarke, 24 Newlands Ave., Newtown, Tasmania.
7LL—Dr. K. M. Kelly, 451 Sandy Bay Rd., Hobart.

FEDERAL QSL BUREAU

RAY JONES VK3RJ, MANAGER

According to J2AAL, through VK3FH, prefixes for Japan are to be changed as from 1st January, 1949. The new prefixes are:—

JA2 Tokyo area.
JA3 Nagoya area.
JA4 Kyoto area.
JA5 All B.C.O.F.
JA6 Not issued.
JA7 Kyushu area.
JA8 Northern Honshu area.

What is now J7 will be JA9.

VT1RF, R. B. Fuqua, Kuwait Oil Co. Ltd., Kuwait, Persian Gulf, advises "that he is operating his transmitter by permission of His Highness Sir Sheikh Ahmad Jabir Alsubah and our political agent."

YU7KX, Oton S. Bernard, Box 137, P.C. Trieste, advises that as at 25th October, 1948, he still awaits cards from the following VK stations to whom he has sent his card:—

2HZ, 2PX, 2ALG, 2BA, 2OI, 2QP, 2TF, 2TI, 2VN, 2ACX, 2RX, 2ADV, 2KB, 2AM, 3BZ, 3CN, 3NC, 3BZ, 3JE, 3GU, 3MC, 3EK, 3ZU, 3OP, 3XQ, 4TY, 4AP, 4UL, 5FL, 6RU, 7CW, 7RK, 7LZ.

QTH of VX1CH is R.N. Radio Station, Kranji, Singapore. Am holding a card from him for a VK2 named Jack whose call sign not shown. Card relates to a contact on 28 Mc. c.w. at 445 G.M.T. Date is also not shown. Owner of card my obtain same on application to this Bureau.

The Amateur Radio Club, P.O., Mhow (Central India) advise that cards for VU2 and VU7 areas should be routed via them.

The D.A.R.C., Postbox 99, Munich 27, Germany, writes under signature of DL1AX Hans Haberl, Secretary:—"We are happy to inform you that German Hams will be licensed by the Military Government. Distribution of DE (s.w.l.) cards will be closed in the near future. We will send and receive all QSLs to German Hams licensed under the call DL.

NEW SOUTH WALES

The November general meeting of the Division was held at Science House on Friday, 26th November, 1948, under the chairmanship of the President, Mr. Maurie Meyers 2VN. A lecture and demonstration of f.m. mobile equipment was organised by Mr. Morice Brown 2OR and given by Engineers of Thom & Smith Ltd. Mr. Brown apologised for the absence of Mr. R. S. Hope, Chief Engineer of Thom and Smith Ltd. and one time 7RS, and introduced the guest lecturer Mr. R. S. Zucker.

Mr. Zucker outlined the requirements of an f.m. system and followed with a detailed description of transmitter and receiver units illustrated by slides and black board diagrams. This was augmented by a most interesting demonstration of f.m. service by direct two-way communication with vehicles operating in the metropolitan area on the 70 Mc. band, handled by Mr. L. H. ("Tubby") Vale 2MR, Installation Engineer of Thom & Smith Ltd.

Mr. F. Heine 2QL, in moving a vote of thanks, congratulated Mr. Zucker on the delivery of this lecture and paid tribute to Mr. Zucker's colleagues for the trouble they had gone to in arranging this most interesting evening which had proved to be one of the most important demonstrations ever given to members and made the occasion a memorable one.

1948 FIELD DAY

The Divisional Field Day held at Woy Woy on 5th December was a huge success, 165 persons being present including the following Amateurs: VK2s OF, CW, NX, KR, VN, HZ, ARN, AEY, LY, BG, ADO, ZH, RP, AKO, CI, ARR, AET, OY, XT, PZ, CX, TE, HO, XU, IV, JW, AHU, CZ, LX, ANH, MR, FP, AGD, OS, TX, AEN, AGL, WH, AZO, RE, AIM, ML, NS, HT, FE, GA, ZC, PQ, SW, EO, MA, AKP, TY, XQ, AEZ, AMU, ADX, YC, IT, WJ, ADT, YL, AC, RU, DR, AFS, JX, AGW, NO, HI, OC, VW, VL, AJB, YP, LS, FH, and AMP. It was the best and largest gathering of Amateurs ever held outside Sydney. Some of the Hams travelled up to 200 miles to be present.

The 144 Mc. transmitter search was a centre of attraction. The transmitter being secreted by 2IT and 2EO who had the experience of being bogged in the process. First in was 2JX and party, the time required 17 minutes.

2OC and party were a close second. Peter 2JX used a simple dipole plus a reflector, which was carried by an assistant who waved it around the dipole. It was very effective and competed with stacked arrays and six element parasitic beams.

During the search the YLs, XYLs, and kiddies were entertained on a launch trip.

The prizes were presented by Morrie Meyer 2VN, State President, and the following were the winners: Crystal Frequency check: 2ZC pair of 807s, and second 2AET a 5R4GY. Lucky number: 2RU pair of 807s, and second 2SW a 5R4GY. Ladies prize was won by Mrs. 2AEN. The cup for the transmitter search was presented to 2JX, and a 5R4GY to 2OC for second. 2WH collected a 5R4GY for coming the longest distance.

Thanks for the day must go to Cec 2KR and Mrs. 2KR for their work at Woy Woy; to Mac 2ZH and Dick 2RP for keeping the books and finance straight. Bob 2AFS gets special mention for supplying the beverage and to Wal 2XU as his assistant on the serving. We can't mention everyone that gave a hand, but the Council thanks all those that assisted and don't forget the next one in 1949.

NORTH SHORE ZONE

After wishing all you guys a bigger, better, and and brighter 1949, with all sorts of shiny certificates coming up, let me hasten to offer apologies to 2BQ, whose call appeared in the November, 1948,

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issue of these notes in place of that dulcet voice of the air-waves 2GQ, sorry o.m.

Congratulations to Mr. Gordon Robertson 2ALA on his selection as organiser of the Fire Brigade's f.m. service. 2BG kicks in again with doings of the v.h.f. gang around his area—many thanks Bruce. 2AH in the midst of bigger and better beams, a four element wide-spaced on 144 Mc. being the latest. 2MQ has moved from his small backyard shack to a comfortable section of his closed-in verandah. 2HL now using a new horizontal beam. 2HO complains most v.h.f. blokes can't work c.w. 2BG elated at working his first ZL on 50 recently. 2LS heard again on 50 Mc. Most of the boys have been having a field day with the ZLs on 50, ten contacts an hour during the peak periods being commonplace. VK3, 4, 5 and 7 are being worked fairly regularly, but any VK6 50 Mc. signal would be as welcome as flowers in May.

2AET and 2ARR doped up a 144 Mc. rig for the field day, mounted the works in a car, and had the time of their lives. The rig was p.p. 6C4s, unity coupled, modulated by a 6C5, 6V6 lineup; the receiver was a 955 super-regen. with two audio stages to a speaker. While 2AET drove, 2ARR worked 2IT, 2VW, 2AGL, and 2SW. Vertically polarised dipoles were used and all contacts were made using 2AET's call. As to the rest of the Field Day news, you'll find it all elsewhere, in a full report.

2AMB still the main DX representative in Mosman and Cremorne. 2NI heading for the west soon. 2AND in a tail spin after exams and a holiday.

SOUTH SYDNEY ZONE

The v.h.f. contest is still the main interest of the chaps active in this area and most of them are on nightly piling up the points. There will be some close finishes when the final scores go in. The recent Intrstate DX has also increased the interest on 50 Mc. 2VW has now got his 144 Mc. mobile gear installed in the car and operates from various locations at week-ends.

2ABC still active on 28 and 50 Mc. bands. 2WJ now operating on 288 Mc. as well as other bands. 2AC still experimenting with Quod Beam on 10 metres, with improved results. 2ABU works plenty of DX on 20 metre phone. 2AB has been very quiet lately. 2ABB is active on all bands with new transmitter. Has an excellent five element beam on 144 Mc. 2UV still active on 144 Mc., but threatens to blow a hole in 40 any day. 2VA not heard lately.

WESTERN SUBURBS ACTIVITIES

A Merry Xmas and a Happy New Year to all! May the New Year resolution be for all you good fellers to supply more news than ever—ring BO399 Ext. 327 after 8 p.m. Monday to Friday inclusive.

Amongst other familiar and homely faces at the Wyong Field Day meet were 2AZO, 2MA, 2AGL, etc., no doubt attracted by the magic of that one word—144. Amiable Lionel Todd represented the P.M.G's. Department and had a happy time with the Hams, on their day out. Mrs. 2AHU had the boys in stitches when she quite innocently asked 2AGL whether he thought the fishing would be good. Warren, of course, had a walkie-talkie job on 144 and we must admit it could have been mistaken for a fishing rod.

In the suburbs 2AHU has the b.c.i. licked, but so far no sign of that new pole. 2BF struggles on with quadruple conversion for 144. Now has 3¼ waves in phase plus square loops. 2DW's next door neighbour said Joe was competing with the b.c. stations, so out went the coax and in went a doublet. 2CL has developed a solid signal on 40 metre c.w. lately! 2AGU not so active. 2OQ has had a bad run with coax b.c.i., but all are friends once again. 2WB has a lash at 20 metre phone at week-ends. 2AER was heard discussing the pro's and con's of disposals equipment. 2TD has done it. Got himself a gal, forsook the rig and is now engaged. 2AHB now has 18 zones on 40 metre c.w. this year. 2GR still tries his hand on 20 metre phone.

EASTERN SUBURBS ZONE

2WR not heard much these days; busy fitting radio gear to yachts. 2KT has a new mod. using phone on 40. 2YF having trouble getting enough drive from his new v.f.o. 2FJ heard on rare occasions. Jack is busy decorating his shack.

2AFZ making up c.r.o. 2AJG has recovered from recent illness, can be heard pumping the key. 2MB busy building club gear for 2BV. Harry has spent the last two months on this job. Still waiting to hear from 2DU with his new class B mod. I must apologise for lack of dope this month, but hope to have more in the New Year (with the co-operation of the boys of the zone); also like to wish all Hams the Compliments of the Season.

DX NOTES BY VK2ACX

An interesting letter to hand from 2AHA tells of his phone effort in the recent "CQ" magazine Contest. Harold worked 60 countries in two days on 14 Mc. with 196 contacts. On 28 Mc., 21 countries with 77 contacts. His open score was 39,525 points which is a very fine effort—congrats Harold. He says he is going back to c.w. for the next test. A few of his choice ones were: VP2, CX, OQ5, CR7, ZE, MI3, VQ4, EA, IS, CP, GD, TG9, HP, YS, GC, AR8, ST, EI, HC, and HK. Harold uses a two element rotary on 14 Mc. and three elements on 28 Mc. He has worked 40 zones and 133 countries post-war, which is very fine DXing. He sends along a few QTHs which you will find at the end of this column.

2DI is still in the lead as far as is known here with 180 countries. His latest catch, a very rare one, VU7AF located in Nepal. He was found on phone in the American phone band. 2HZ has now 148 countries, his latest additions being ZK2AA, MP4BAB, HP1BR, VR3A and UR2KAA. A very, very, nice one heard by Bill was FL8MA in French Somaliland. His frequency, approx. 14,100 Kc., and QTR 0530 hours.

2VN adds ZC1CL, HP1BR, VP1AA and IS1AFM bringing him to 38 zones and 131 countries. Still does not find much time for Ham Radio. 2EO adds VP8AM, OQ5RA and YU2A for 40 zones and 157 countries. Now using a three element rotary and his AR88 receiver account for the rare ones we hear Dave calling and working. 2QL is now W.A.Z. confirmed after receiving a card from AC4YN—it should not be long now before we see that coveted certificate on the wall at 2QL. Frank adds VP6CDI, ZC1CL and FT4AB for 143 countries. Here it's 170 with FE8AB, YS1GM and AR8BM. Still no card from zone 40. Had an air mail letter to OX3GG returned from the d.l.o. stamped "unknown."

VK9NR on Norfolk Island has been on now and again, and has been worked by a few of the gang. He will be an additional country very soon.

The State of Israel is represented by 4X4AA, 4X4AB and a few others. A good one to have up your sleeve for the official listing in the countries list. Also from that part of the globe, we have ZC8PM (who is W2AIS) operating from Nablus in what he calls Arab Palestine. Well fellows, that's all for now, so a Merry Xmas to you all. Lots and lots of good DXing in the coming year and may our DX bands be always open—2ACX.

HONOR ROLL

Call	Zone	Countries
VK2DI	40	180
VK2ACX	40	170
VK2YL	40	160
VK2EO	40	157
VK2HZ	40	148
VK2QL	40	143
VK2AHA	40	133
VK2TG	38	141
VK2VN	38	131
VK2RA	38	128

Some QTHs to note:—

YS3PL P.O. Box 222, El Salvador.
YS2AG Alfonso Gadala Maria, Santa Ana, El Salvador.
C3EA (Formosa), A.P.O. 909, c/o. P.M. San Franciso.
HP1LB Box 1616, Panama City.
MI3SC Radio Marina, Asmara, Eritrea.
TA3FAS Lt. J. Adel Tusafg, American Embassy, Ankara.
VP3TR A.P.O. 857, c/o. P.M. Miami, Florida.
ZE1JI S. N. Potterton, P.O. Shabani.
CX2CO R. Sierra, Pte. Berro 2741, Montevideo.

NORTH COAST AND TABLELANDS

The Northern Gang were very active during November, especially the v.h.f. gang who were pleased with results. 2ADE really got amongst the ZLs and Interstate VKs on 50 Mc. The 2ADE/2LH link is still operating and 2PA heard all States except VK4 and VK6. The band sounded like 20, signals every 15 Kc., thinning out between 52 and 54 Mc. 2ARY is a new one in Bellingen using p.p. 807s. To his efforts in obtaining masts hangs a tale. Harry set sail, selected a nicely timbered patch and carted off two 50 footers. The bounce came later, when the owner demanded the return of the timber, the masts having been erected in the interim—it took a lot of explaining before a settlement was reached. 2FN hopes to move into an a.c. area after the Xmas vacation. 2ZY using a lazy H on the U.S., compared his new receiver with a 640 owned by 2FN and quite happy about it. 2OE visited Port Macquarie and Kempsey.

2SH enjoyed two weeks' holiday mostly fishing, hopes to have the rotary going by Xmas. 2XO recently moved into a new shack, out of floods' reach and providing the a.c. keeps on, won't stop next time. 2GI QRL cane cutting, but gets on 80 most evenings. 2ART on 20 with two half waves in phase. 2SO's caravan is nearly completed. 2AFP on with a new rig and doing well. 2ZX purchased two steel towers, one for 2ARG and one for self. Quite a job to decide what constitutes two masts in pieces. Much midnight oil being burnt on beam and boom design. 2UN inactive, uses an AT5 when on. 2ATS decided QRP no good, so is back on the QRO. 2ZP very inactive. 2GE late of Wagga, now of Moree, has a fine signal on 40.

NEWCASTLE ZONE

Newcastle was favoured with a visit from 2XU, 2YC, 2ZH, and 2VL on 14th November and we are sure they had a nice day. Local escorts accompanied the visitors on a tour of the shacks and eventually saw them on the homeward track. We all hope the XYL closed the shop Jim!

Conditions for the month have been very bad. 2FX is erecting a new antenna of his own design, somewhat like a quad. 2TE has some higher voltage these days. 2BZ had the hard luck to lose his tranny, on at the moment with a temporary supply. 2ADX putting out a terrific signal from a new beam, 2XQ was heard from there the other evening. 2AFS after a few weeks tracked down the gremlin in his modulator, his motto now—no mud moulded valve sockets. 2AGD experimenting with a quad when not swinging a paint brush around the house. 2FP has 99 up on 10 metre phone and awaiting the elusive 100th before rebuilding. All the best for the New Year from the Newcastle gang.

COALFIELDS AND LAKES

All had enjoyable day at Woy Woy and look forward to more outings in the future. 2KZ at present in hospital at Newcastle, hope you are better before you read this Max. 2YO also in hospital at Kurri, fall of stone in the mine was the trouble, hope you are about soon George. 2KF not heard much, has been away from home working. 2TY just returned from three weeks holiday at Lakes, heard on his old stamping ground 10 metre phone. 2JZ not heard much but possibly bagging his share on 10 metres. 2VU on 40, doing a lot of listening on 50 Mc., heard a KA in recent weeks when the band opened. 2PZ lots of good gear to carry out his many ideas, but not much time. 2MK rebuilding, should be heard soon. 2ADT spending most of his time on 50, lots of VKs and ZLs worked. His new receiver six-band turrett coil change creating a lot of interest.

2YL should be heard more often in the near future, a new 50 Mc. beam scheduled for the holidays. 2KR, a 40 metre regular, promises to supply the news from his district each month. 2AEZ strong on 20 and he too will supply news from around Gosford way. 2AMU is going on 50 Mc. now, also on 28 Mc. with beams. 2RU doing very well on 50 Mc. and getting set for 144. Hill in the direction of N.Z. makes the ZLs hard to raise on 50. 2TX was at the field day, please let me know of your doings. 2OC Owen still sticking to the v.h.f's. That is all for now chaps, please let 2KR, 2AEZ, 2AMU or 2YL know of your doings, all the best for the New Year.

SOUTH COAST AND TABLELANDS

Many of the stations in this Zone were heard this month including new calls 2ALN of West Wyalong and 2AOX of Woonoona, the first with 2 watts series modulation and a good signal, no dope on 2AOX. 2WP QRL on 40 DX, heard at all hours working and calling it. 2OW working 2FZ this must be strange to Gordon, pre-war he was 2FZ himself. 2AIK got across filter condensers whilst making adjustments to the v.f.o., and dropped the v.f.o. six feet, hard luck Cecil. He was lucky in another direction, a local radio service donated the bits and pieces of many years gathering, so he has plenty of gear to play around with. 2TC and 2GU are working together nicely on 50 Mc. Heard on 144—2PI calling "the old grey mare," who we believe was 2VS who was coupled up with wheelbarrow containing portable 144 gear. The latter raised cheers from passing cars.

2PI and 2VS both work at b.c. station 2CA. The DX bug bit 2PI and he is off to a good start, with UB5BC for his first DX contact. 2JQ now QRO with 50 watts on 40. 2ALS not too active of late. 2DO contacted 2JR portable on Lord Howe, the latter talking with his brother at Yass. The QSL has arrived already, a photo of the landing jetty at Lord Howe. 2OY worked a lot, he is thinking of doubling to 50 Mc. What about some news from Wollongong, 2WP the only station heard from there. 2AKE QRL shearing, heard once only. 2DO received a nice card from HK1FQ, it's really well worth having.

VICTORIA

The General Meeting of the Division was held on Wednesday, 1st December, at the Melbourne Technical College. The first part of the meeting comprised a talk on "Electric Shock," by Reg Busch 3LS. In dealing generally with the effects of electric currents on the human body, Mr. Busch first pointed out that the intensity of the sensation produced by electricity depended mainly on the value of current flowing, rather than the amount of potential difference (voltage) required to produce it. The effect of electric currents seem to go through three stages as the amplitude of the current is increased.

The first sensations are produced with a.c. (of power frequency) at a current of about one milliampere; with d.c. about five times as much current is required to produce an effect of the same intensity. The end of the second stage is reached when the current is such that the subject is just able to let go the electrodes. This current value, called the "let go" current, is about .5 milliamperes a.c. With currents above 7 or 8 milliamperes a.c., the "freeze on" stage is reached, at which it is found impossible to release the electrodes. No harmful effects are produced by "let go" currents if they are only allowed to persist for a short time, but currents at the "freeze on" value will cause death if allowed to persist for periods greater than one minute.

Mr. Busch, speaking from experience, described how it feels to be "caught up" on a.c. and on d.c. live equipment. The need for care in dealing with radio equipment having high tension power supplies was stressed, and charged filter condensers particularly need to be treated with great caution. Mr. Busch then described the steps to be taken in the rescue and resuscitation of persons shocked into unconsciousness by electricity. The need for speedy action was stressed and the Schafer method of applying artificial respiration was described in detail and demonstrated on 3WQ, who volunteered to act as a "body."

In the discussion following the talk, great interest was shown by the audience, and a few speakers describing their personal experiences, supported the lecturer's warnings concerning the lethal powers of Amateur Radio equipment. At the conclusion of the discussion, Mr. Busch distributed copies of a pamphlet "Life in the Balance," describing the method of applying artificial respiration. Copies are available for all who request them.

TECHNICAL ADVISORY COMMITTEE

Frequency Measuring Contest.—It is proposed to conduct a frequency measuring contest shortly after the next Standard Frequency Transmission from 3WI which is scheduled for Tuesday, 25th January, 1949. Publicity will be given to this contest over 3WI. It is expected that the contest will be run on similar lines to those organised by A.R.R.L.

Laboratory Workbenches.—These have now been completed by a gang of enthusiasts working with T.A.C. member Harold Webber 3PW, who has fostered this project personally, right from its inception. Harold is also to be congratulated on the job of organising the erection of the new antenna for 3WI, erected several months ago.

Library.—Members are reminded that among the literature available from the Library are handbooks on military equipment available ex Disposals. Some of the equipment described in detail in these excellent handbooks are (a) AT5/ARS Transmitting and Receiving equipment, (b) ATA and ARA Transmitting and Receiving equipment, and (c) Bendix type Frequency Measuring equipment type BC221N.

LADIES COMMITTEE FORMED

In response to an invitation issued to wives of members, a happy gathering took place at the Rooms on Friday, 3rd December.

A Ladies Committee was formed to assist members in arranging social functions and the appointment of the office-bearers of this Committee will be made at the next meeting on Wednesday, 5th January, at 2 p.m. at the Rooms.

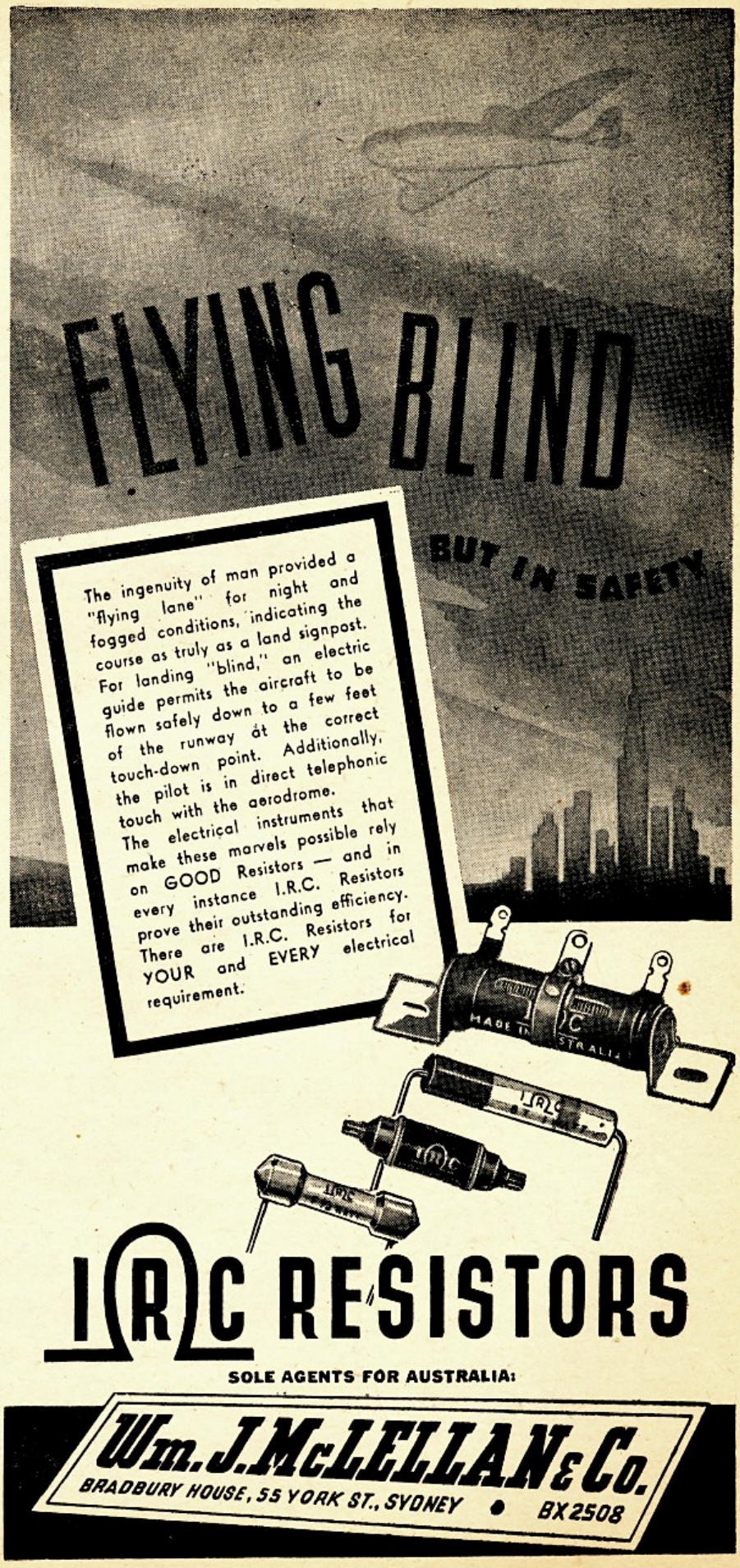
All ladies who are interested are invited to join in and attend future meetings.

VICTORIAN QSL BUREAU SERVICE

The following information will be of interest to Victorian Amateurs:—

OUTWARD.—Bring your cards into the General Meeting OR Post to Outwards QSL Manager, Mr. F. O'Dwyer, 190 Thomas Street, Hampton, S.7. Price is ½d. per card. Cards to VK3 are free.

INWARD.—Collect cards at the General Meeting OR supply Inwards QSL Manager, Mr. G. Roper, 26 Lucas Street, Caulfield, S.E.8, with stamped addressed envelopes.



T.A.C. MEETING NIGHTS

It is noted that the Technical Advisory Committee of the Victorian Division of the W.I.A. hold meetings at the Institute Rooms at 191 Queen Street, Melbourne, regularly throughout the month.

All members and visitors are cordially invited and welcome to attend these meetings at which many technical discussions and demonstrations take place. Meeting nights are as follows:—

1st Tuesday: Practical Work.
2nd Wednesday: V.H.F. Group.
3rd Tuesday: T.A.C. General Meeting.
4th Tuesday: Practical Work.
4th Wednesday: Receiver Group.
5th Tuesday (if such): Practical Work.

VK3WI will announce the programme for these individual meetings in forthcoming broadcasts.

EASTERN ZONE CONVENTION

Members of the Eastern Zone met at Leongatha on 27th and 28th November for the Annual Convention, and were pleased to welcome VK3s AG, ML, WQ, IK, LS, ED, MN, HK, and RR, who came from Melbourne for the evening. First to arrive was 3QZ and car-load, followed soon after by 3LS, 3ED, and 3MN, who had caught up with 3HK, stopped on the road working 3DI and 3VL on 50 Mc. From then on there was a stream of chaps going into 3DI's yard to inspect his shack and 3VL and 3HK's 50 Mc. portables. Much merriment was heard during the recording of all members' voices by 3DI.

Dinner was delayed through the breakdown of 3AHK's car. However, 33 sat down at the tables. After the dinner we adjourned to the Council Chambers, where many matters were discussed until the early hours of Sunday morning. Unfortunately the Melbourne gang could not stay overnight, and left without solving the mystery of the cigars. XYLs of 3DI, 3QZ, 3PR and 3LV, assisted by Dawn Colley, prepared a tasty home-cooked supper, which was much appreciated by the members.

On Sunday morning the gang gathered at 3DI's shack for further recordings to be made, before going out to inspect 3PR's shack. 3DI and 3US left them to it, and took 3DI's 50 Mc. portable to hide it. The trouble was, they hid it too thoroughly—within sight of 3PR's QTH—as the searchers with 3VL and 3HK, who had their rigs, couldn't find it and eventually had to give in and return to Leongatha for lunch, again prepared by the XYLs.

After lunch, a short Field Day was held, but no outside sigs except 3AKM and 3CI were heard or worked. Afternoon tea was on at 4 p.m., followed by a short sale of Disposals gear, after which the gang departed, leaving 3HK to visit 3PR, and 3US/VL to continue their stay at 3DI's.

Eastern Zone members who attended the Convention were VK3s WE, QZ, SS, BB, LV, TH, PR, DI, US, VL, RH, AEP, AHK, ADC, and two associates. 3DI is to be congratulated for organising, with 3PR's assistance, such an enjoyable programme, and the XYLs for providing such tasty meals.

3CI reports that he worked 14 DX 50 Mc. stations and two stations on 144 Mc. on 5th December. 3AEP has a new antenna and is working Gs on 40. Would those members who can't join the hook-ups on 3650 Kc. on Sunday nights, please send news to 3US Red Hill, for inclusion in the magazine notes. The sub-Branch held its meeting on 6th December and those attending heard a lecture on oscillators, and a description of a crystal stabilized v.f.o. by VK3KT.

Comments of VK3SS on the Convention.—Having returned from the Eastern Zone Convention, the thoughts of it seem so pleasant, that methinks maybe they are worth recording in a rough way. The game started by picking up our esteemed President, Bill Williams 3WE, who had travelled by stage coach from the mountain fastness at Omeo to Bairnsdale, then by train to Stratford where he was collected. We picked up Ted Clark (awaiting call sign) in Maffra, then at Tinamba transferred into the Mercury of the Kellas establishment. Ossie Kellas 3AHK took up the reins and I assisted him to drive from the back seat. Thus we started in fine form about 3.45 p.m.

Arriving at Traralgon we picked up Pat Read 3RH and that being the last stop—we hoped—Ossie gave it the works at the request of, and aided by, his mates in the back seat. Well we had a beaut trip, gradually entering lovely green hills, and first class scenery. The townships of Morwell, Boolarra, Yinnar were deeply coated with our dust, and as the super Ford rolled round the bends up hill and down dale, everyone felt fine.

Then a most disturbing noise, indicating that at least one wheel had come off, prompted the back seat drivers to suggest Ossie might slow down and investigate. Upon being convinced that it wasn't just another rude remark, an investigation disclosed the back spring had shown preference for one particular wheel and so moved over into its works. We weren't worried, for everyone know Ossie would have a most complete kit of tools and so he searched the rear portion, and threw the whole travelling workshop at our feet. This was a rusty old jack that only worked on the bumper bar, plus two small tyre levers. Mr. Editor, you can't print the words and events of the next 20 minutes, so the story will be resumed as Ted Clark and 3SS hiked hopefully up and down those big hills for help. We were soon swept aside by a couple of nasty types in a smart blue car who coated us with dust as they ignored our pitiful gestures. Our morale was kept up by invoking all kinds of misfortune upon them, and we hope their electrolytics break down and dish in their power trannies.

Then the band opened up, and we were lifted by a big truck which took us a few miles. More hiking, until a beaut car answered our prayer and gave us another lift. We flattered this driver by comparing him to the "pirate" types in the blue car, so much so, that his mate who we also assured was a real gentleman, confided that the driver was none other than the garage proprietor at the township we were heading for.

The Convention dinner, according to the time table, would be at the second course by this time, so we explained everything to our new friend and back he went to gather up the rest of the gang who were forlornly waiting for something to happen. Well our great new mate (should be a Ham), after hearing our fears that the visitors from the City would wolf all our dinner if we were more than an hour late, he said, modestly, "I'll get you there." So he fired his jet turbines and covered the remaining twenty odd miles quicker than the bloke who comes back on your frequency just as you are about to answer that very special CQ DX call.

So we arrived about 90 minutes late, and found a first class feed awaiting us, some dreadful remarks, and a good turn up of visitors (complete with Disposals cigars) from the City, who were the better types, because our dinner was intact—thank goodness, for we were very hungry, and it was a very fine dinner.

Next day the 50 Mc. cranks stoked up ready to convince the doubting Thomases just how good that wonderful band was. Keith 3HK had his portable car there, with a dipole attached thereto, which as it leaned over at the top, nearly tipped his tiny car over. It was just big enough to hold Keith and his collection of FS6 looking mobile 50 Mc. gear.

Gwen (3US, XYL of 3VL) and Rex had a suit case full of assorted parts, said to work on 6. When they switched on the vibrator, Keith's receiver was struck dumb, but said person was too much of a gentleman to say what I would have said.

Personally, my impressions of 6 metres are well—er—ANY sig is regarded as a "whale" of a sig, great excitement prevails if an S9 sig manages to crash through the super-regen. hiss and vibrator hash—even if said sig comes only half a mile. It consists mainly of twirling bits of rusty conduit on the end of a stick, turning howling knobs on receivers and optimistically hoping a sig will appear from some far away place, or the band will open up. Wonderful things are said to happen when it does. Give me the comfort of good old 80 metres.

After the Convention, and afternoon refreshments were disposed of, the five car-less souls were jammed, with sundry junk and gear, into the backs of a few baby cars—no one had a big car, Ham Radio keeps the boys too poor, I suppose. We were returned to North Mirboo where Ossie's car was waiting thank goodness. Coming home very, very cautiously, we called in on 3TH Gordon at Yinnar, 3BB Bert at Morwell, 3RH Pat at Traralgon, then 3QZ Graham at Traralgon also, where the weekly zone hook-up was in progress. Great frivolity prevailed while Mrs. Colly fed us on sandwiches, biscuits and cheese until Graham, fearing we might blow his rectifiers, signed off. So, all ye who didn't go, see what you missed—but make sure you attend next time.

NORTH EASTERN ZONE

When 3JK opened up his November issue of "A.R." and noticed that the predictions for 28 Mc. showed the band was coming good again, he decided to do something about his major QRM. So he invited 3YV to his "shack" for a discussion on the "ether." Along went 3YV with his mind full of DX on 144 Mc. (phone, of course, couldn't use c.w. because of a glass wrist caused by rheumatism). Straight into Jim's den he went, where he soon found out to his horror, as Jim and a Doctor pounced on him, that the ether was a different type to what he was used to. After he came back to earth, he discovered that all his fangs were missing, and the Dr., who by the way is a pal of 7LL, was also missing, but Jim was there sitting with a large smile of satisfaction on his face. His success was complete—3YV with no teeth meant no phone QRM and with a glass wrist no c.w. QRM. Now for that tasty 10 metre DX, phone

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only, as Jim's wrist is useless after the struggle. 3WZ was not in the plot as he is at present ear-bashing 3QC in Terang.

3DW is leaving shortly for Woodend. 3UI is acting President. 3BP heard on 40 c.w. with 100 watts. 3KR is on holidays. 3DG has new mast up. 3FD acted second op. and chief beam turner for 3ABG/Portable on 144 Mc. field day. 3ACW built new transmitter for 144 Mc,, 3ABG his only contact so far on 144. 3UI now using v.f.o., Alan has worked 3ABA and 3ABG on 144 Mc. On 50 Mc. VK3s, VK2s, VK4s, and VK5s have been worked. 3TS, 3UI, and 3APF have worked 3BM on 50 Mc. 3ABG, while portable on 5th, worked VK3IM, 3UI, 5MP, and 4BT on 50 Mc., and 3ACW, 3UI, 3ABA/Portable and 3ACM/Portable on 144 Mc.

CENTRAL WESTERN ZONE

Disposals gear arrived in a most imposing case and opened up OK. We got most of the gear ordered, and those that received same, seemed well satisfied. The Horsham Convention effects are still with us as 3AKP has never got over 3TA's three element beam and now has 60 ft. of good solid tree lined up out in the mountains; main trouble of course is to get it in, but that is a minor detail, to one set on the DX. 3OW at Lubeck is going all portable for the holidays and is very busy getting his 5 watts into movable shape, which reminds me of 3FI's portable rig in the car; is the car attached to the whip or the whip to the car Ray? It certainly does an f.b. job. 3IQ and 3XC are busy trying to push 50 Mc. sigs over the hill between them, but up to date have not had much luck, keep trying boys.

3ARM is going quiet on radio for a while and getting the harvest in. 3YW has struck a snag or two with the four element beam for 50 Mc.; the beam is OK, but the mast is not, so it looks like some extensive alterations before it can go up. A miniature Hamfest descended on Stawell a few weeks back in the shapes of 3GN, 3IV, 3AKR, VL3KR and a crew of Bush-portables, the occasion being a demonstration of mobile work to the local Brigades, they put up such a good show that a network is to be formed to cover the local farming areas and roped in that very busy person 3HL.

Zone hook-ups, we are sorry to say, are not quite up to expectations dispite the change of time, maybe we did the wrong thing but will give them a longer trial, so how about it chaps, mark it up on the slate **"Zone Hook-up Second Sunday in the month, control station on 7120 Kc. Time 2 p.m."**

SOUTH WESTERN ZONE

Bert 3VA is very beam-happy these days working DX on 10 and 20, giving 40 away. Bob 3GR wishes every Ham, who calls in, to take off their shoes when entering his shack. Bob is playing with folded dipoles on 20 a few feet from the ground, and gets better DX than when up high. 3BU still puts out good signals on 7 Mc. 3AKE is 144 Mc. happy, won't work on any other band. Murray 3AMP still working on wire recorder, but hopes to be back on 40 soon, 3WT puts out fine signals with his 3 watter, work any DX Bill? Heard that 3VF and 3BW had some Ballarat boys down getting dope on 144 Mc. gear, did you have a look around the shack after they left? 3QC still silent, too much work selling radios. Jack 3JA working DX on 10 and 20, got over 100 countries up. Norm 3EQ working on gear for 144 Mc., but finds time for a QSO on 40. Frank 3ZU too busy working at P.O. fixing up phones the YLs crack up. 3ALM now putting up super 10 metre rotary, look out for 3VA, heard Bert was only one who worked DX on 10.

3DS is having QRM from John of 3HW and don't know what band to use, but thinking of going up to 10,000 Mc. for a change. Heard 3ASV has poor front-to-back ratio with his 10 metre beam, only spaced a few inches apart. Also heard Allan 3YT is a keen 10 metre bird and working QRP lately in other directions. Jack 3WN going portable at Xmas to Avoca, and has been on 40 for a few rag chews. Neil 3HG still works that rare DX with Vee beams; has alternator working and a 640 receiver. No word of 3MC, must be working hard. Leigh 3II was in dry dock for a few weeks' overhaul in Hamilton Hospital, back again with same cheerie voice. 3HF, who knows how to work DX, is thinking of running a long wire antenna from the top of the commercial mast 206 feet up. Ted 3PS, the real old timer, has FSG receiver perking 100 per cent. on 20 now, hopes to have transmitter crystal control soon with 100 watts. Les 3DX putting up new super rotary beam for 20 on 45 feet steel tower, at present time Les is using an 834 in final working DX on c.w. 3AKR in strife with aerials, thinks of putting up Vee beams. Kev has plenty of space on farm and has a new 640 receiver also.

Stan 3SE been off air lately probably due to courtship troubles, or is it that 144 transmitter and receiver have been taking up spare time. Andy 3BE now knows what a QSO is like, had a QSO with Andy for 2 hours 10 minutes the other night. 3BE is troubled with a Lazy H antenna on 40 that works only one way, which way is that Andy? 3BI is going for a trip to VK7, hope you have a good time Bert. 3HW, the chap who is going to dice the DX, now finds 144 Mc. under skin with SCR522. John is putting up a 16 element beam on top of 45 feet stick and he wants applications for someone to scale the stick as John's nerves are not the best now. 3VA, 3GR, 3HW are going to open 3UT's new shack, transmitter, vertical antenna, and Vee beams when finished. 3VA said he was drinking contents of bottle before cracking it on shack. Well boys let's know what you are doing so as I can put them in "A.R." Address all dope to 3UT before 28th of each month.

In the S.W. Zone hook-up on 5th December, 3BE, 3WT, 3ALG, 3YE, 3IC, 3UT took part. We would like to see more fellows in the monthly hook-up.

Geelong Amateur Radio Club

At a meeting of the Geelong Amateur Radio Club held at the Clubrooms, 65 Lt. Malop St., Mr. Alex Bell (3ABE), with the aid of outsized meters, demonstrated the movements of a moving coil meter and an iron-cored meter. After which he demonstrated a Kingsley AR7 receiver. Alex also brought along a Type A Mark 3 portable transceiver. Instead of the usual meeting the following club night, members were taken over the local juice plant, a tour which proved most interesting and took 2½ hours.

Emergency Network.—On 12th December the Geelong Hams held an emergency test on 80 metres. Those who took part were: 3BU base transmitter and portable, 3ABU, 3ABW, 3IC, 3ABE, 3ALG, 3CM, 3AJF, 3WC, 3VF, 3AKE, and 3WT. In conjunction with the test, Mr. L. G. Lowry, the Regional Fire Officer, will give a lecture at the next meeting on Map Reading and Mr. McConnell will give a talk on "Message Handling."

A newcomer to the Geelong gang is 3ABK Dick Heighway, who now has a portable call of 3ABW. Phil 3APG is messing about with a v.f.o. and also has a new receiver going.

QUEENSLAND

The November meeting of the Queensland Divisional Council was held, for the first time, in the new club room. Six new members including 4EF, 4ZL, and 4CF were admitted. Federal Councillor read correspondence dealing with the Uniform Constitution and the proposed Correspondence Course A.O.C.P. Quite a discussion took place on the sub-division of bands for c.w. and phone.

The new rooms at Victory Chambers will be open to members from Monday to Friday between the hours of 12 p.m. and 2 p.m.

General Meeting for November was held in the Elizabeth Street room on the 26th November. There were thirty-six members present. In the absence of 4AW, the Vice-President 4KB occupied the chair. An auction of the winter edition of the Call Book was won by 4WG and netted a little profit to the Division.

Members are advised that as from 1st March, 1949, all subscriptions will fall due on that date each year.

Trophies in connection with the recent D.F. Field Day were presented. 4RT received an Electric Kettle, and 4ES a 30 watt Transformer.

The general business of the meeting was followed by two lectures, one by 4KB on receiver noise and the second by 4VJ on the Quod Beam Antenna.

The Council meeting for December was held on the 3rd December, having been brought forward a week because of the Xmas Party which took place on the 10th December. The Secretary reported that the business of the Division was so heavy now that an assistant secretary would be very welcome. The matter of forming sub-branches was discussed and it is hoped to form sub-branches in the larger country towns. The matter is still in the embryo stage and further developments will be announced over 4WI at a later date.

The formation of Emergency Communication System to provide communication system by Amateur operators to give assistance in times of emergency (e.g. bush fire fighting, flood warning) was discussed. Further information is being sought from other States. Discussion on the matter in the Sunday morning hook up showed the idea to be a popular one.

Letters of appreciation are still being received from G land for food parcels sent by this Division.

The Rubber Man of the month is 4FN. Frank thinks nothing of holding 1,500 volts. Reckon he has an open circuit in his relay—he's still on deck anyway. Whilst we are on the subject of 4FN, let us report that Frank, using his portable rig 4MF, had a beano on the 21st November, making 144 contacts, most of it DX. But the month wasn't all roses for the operator of 4WI for another high power transformer gave up the ghost, but he still has a long way to go before he can work DX with the smoke pouring out of the rig. At least that is what 4PR did!

ZONE NEWS

Mackay Zone.—4KW Harry reports 10 metre signals very good during the last week-end in November. A little bird told me that 4KW is taking swimming lessons every Sunday morning now. 4FH is moving again, South America this time John? 4BQ still very active on 20 and with Harry and 4AM filling in their spare time re-erecting antenna at John's new QTH.

Townsville Zone.—4GD is the only one in this zone interested in 6 metres, and reports other activity very quiet. The President of the Townsville Radio Club, Mr. Greenwood, puts in a lot of spare time listening to the 50 Mc. signals.

Ipswich Zone (4WS).—Newcomer to the zone is 4LT; all the very best in the new venture Albert. 4WS just received a few new chasses—looks like a complete re-build Bill? 4GG has returned from his holidays and still using the good old 50 ft. a side. Temporarily located in the zone is 2AWC—looking for 144 Mc. contacts.

South West Zone (4ER).—4DA knocked up a very good score in the recent VK-ZL Contest. We believe he is now eligible for DX C.C. 4RF has 93 verified countries, Fred has applied for the B.E.R.T.A. award. 4XN looking forward to the opening of the new 21 Mc. band, but at present looking for 50 Mc. contacts. 4UX worked CP5FA to complete 100 countries on phone. 4ST has bought a new engine for the car, so radio is getting a rest. 4TY reports DX on 40 metres very good in the early mornings.

Bundaberg Zone (4XJ).—Les is very active on 28 Mc. and reports that the vee beam gives better results than the vertical. The Bundaberg and District Amateur Radio Society held its second anniversary meeting at the residence of 4PG on the 26th November. 4PG is re-building, a new rig will be complete with band switching for 3, 5, 7, 14, and 28 Mc. bands. 4CW active on 7, 14, and 28 Mc. 4HE active on 28 and 50 Mc. and building new antenna array for 28 Mc. 4RJ loafing.

Central Zone (4HZ).—4HD has two receivers now, an AR7 and a Crossley, and according to Jim has a very f.b. rig. 4LN active on 14 and 50 Mc. 4XR chasing 14 Mc. DX. Newcomer to zone is 4RA. 4HZ very QRL building and does not expect to be active on the bands until 1949.

SOUTH AUSTRALIA

The notes this month are required by the Editor to be in his hands a little earlier than usual, and therefore I cannot cover the general meeting, and consquently there is very little city news. One item of news however can be classed as "Hot," and that is the fact that Ross Kelly (5 Little Watts, to use the phonetics of this infamous, sorry, famous station) is bemoaning the fact that all the power that he has left at his QTH since the visit of the R.I. is five little watts. However you can't keep a good Ham down, and I have just heard from one of my spies who was passing the shack as the R.I. was leaving, that Ross was in QSO with heaven and the other place, and at the same time waving farewell to the R.I. and utilising his remaining hand to frantically remove the high voltage windings of his final tranny, which you will all agree is no mean feat even for a "professor."

News has arrived via the grape-vine that nominations for Council next year will exceed the number required and therefore voting will be found necessary. This is good news to the present Council members, as new blood is always required in the running of any organisation, although sometimes new blood turns out to be somewhat anaemic and loses interest after one or two weeks. Anyway several of the stalwarts on the Council would appreciate being voted out, as they are showing the effects of being the packhorse for the large majority of members. Don't be scared that they will be hurt if you don't support them in the voting.

Talking of Council duties reminds me that I was a little slow off the mark at the last general meeting and was grabbed for a working bee at Doc's QTH, in spite of my protestations of being very, very busy on that night. The job was connected

with the disposal correspondence, etc., and any other job that might be going. Well, did I cop the lot, I was new to this stamping, sealing, sticking and sorting business, and did they go out of their way to show me up. Jim Paris, Cec Baseby (5BZ), and Hal Austin (5AW) were such a rowdy lot that they were parked in a room by themselves. George Ramsay (5GD), Dr. Ross Adey (5AJ), Doc. Barbier (5MD) and myself (5PS) were confined in the shack (I didn't do too bad out of it, I am re-building). I never worked so hard in all my life, every time I tried to tell them one of my Sunday school stories they smothered me with envelopes and sheets of foolscap. Cec. Baseby stamped in every now and then to do his "Simon Legree" act, always seeming to make wild flourishes with his rawhide whip at me. Doc. periodically drifted in with a wide grin on his face, and looking at me would say "how are you doing, Crackers" (well it sounded like Crackers). Ross Adey kept taking sidelong glances at me and whispering that he thought that my figure was a perfect set-up for a "vernia" or something. He scared me so much that I was frightened to even lift a cup of tea at supper time for fear that I burst something or other. Just as we finished, Gordon Bowen (5XU) walked in and made the somewhat lame explanation that he had been delayed practising on his organ at Maughan Church. This caused me to have hysterics, and by the time that they had all thrown water over me to bring me around, it was very late. George Ramsay made a lightning dash by sea, land, and air to enable me to catch the last tram, and I was a very tired and overworked Council member as they lowered me into my couch of repose that night. So you can see my prospective Council members, it is not all beer and skittles being on the Council.

It is a pity that the general meeting cannot be written up as the title "General Discussion" looks very intriguing. It looks quite possible that Ted Cawthron (5JE) may be persuaded to rise to his feet and say a few words on some subject or other, and it is also quite on the cards that Les Pearn (5PN) will condescend to rise and softly, but purposely knock over anything that I might bring forward. Well, time will tell.

The present march forward in Amateur Radio science leaves some of us lagging a little, but I came across the following lines and felt a little more cheerful. Be not the first by whom the new is tried—Nor yet the last to lay the old aside. Not bad eh!

Now for some news from the South East corner of our fair State. When it was winter time, the excuse regarding lack of news was that it was too cold in the shack, now that the weather is on the improve I suppose it is too good to remain indoors. Anyway, here is the little that my spy has scraped together. 5TW has been very quiet for two reasons, in the early part of the month his rotary convertor was on loan, and then his aerial blew down in a storm. However, 5CH aided Tom to get the skywire up in the air again, so we can expect to get some news of him next month. 5CH is building a new modulator and his quietness won't last long now. His D104 has been repaired and is better than ever, he has been getting across to the Yanks and Canadians on c.w. with f.b. results. 5JA is in Melbourne again and no news is available. 5MS has not been heard of since he had the a.c. installed. Nobody has been heard getting across the mains so "no news is good news."

A couple of months ago I mentioned that there were two starters from Mt. Gambier for their tickets and I am very pleased to announce that they have passed the exam and should be heard any time now on the air. The chaps concerned are John Harris and "Erg" Von Stanke. John, by the way, is to be married on 4th December, so it is possible that we won't hear much of him until the New Year. "Erg" had bad luck recently, as a fire destroyed all the radio gear that he had been collecting in anticipation. However, in true Ham spirit, the boys collected quite a bit of gear and so "Erg" will be on as soon as his licence arrives. The best news always is kept until last and I am no exception to the rule.

5CJ (Col. to you) who by the way is my unpaid spy, has not been very busy for the simple reason that he is also to be wed on 11th December, and having been lucky enough to secure a house as well, one can see the reason for no activity on the air. (How did he get the house?, well I look after my spies and nothing is too much trouble for me, Ahem.) Be that as it may, we all join in wishing Col. and his intended all the best for the future, and don't forget, Sked's before Dishes is the motto.

Due to the fact that Cec. Baseby (5BZ) has resigned from the office of Treasurer of the VK5 Division, several alterations to the complement of the Council have occurred. Gordon Bowen (5XU) now becomes the new Treasurer, Dr. Ross Adey (5AJ, Ross to you) becomes Programme Organiser, and Tom Laidler (5TL) has been co-opted as the new Council Member.

The usual thing to do at this period of the notes is to write up the doings of the Northern gang, but apparently there is nothing doing, as my usually "energenitic" correspondent from that district has decided to keep all the news for his own publication "Splatter." Which only goes to show that talent will always drift to the higher paid job (Editor please note). Anyway Les what about sending me a copy of "Splatter," and then I can pick out the highlights for "Amateur Radio."

You chaps who are off duty during the daytime would be doing a good turn to yourselves and also to the Woodville High School, if you could contact them on 40 metres. These lads are very keen and get a great kick out of a QSO, but contacts are scarce during school hours for obvious reasons. The call sign is VK5WH with Gordon Bowen (5XU) as science master (wot no organ?).

News has reached me that these notes are being read by an increasing numbr of XYLs, in fact I know of one XYL who rushes out to the front gate on the day the postman delivers the "mag," so as to be the first to read it. I have been puzzling my head as to how I could cater for this female audience. So far no inspiration has arrived, although I am tinkering with the idea of being a radio Dorothy Dix. Couldn't you see it. "My dear Dorothy" (or should it be "Pansy"—Editor), writes Nancy, "the other day I accidentally knocked a cheap valve off the shack table, it was an 813 I think, anyway my husband used quite a lot of words that I have never heard before, does this mean that he no longer loves me?" signed broken-hearted." I think that I would enjoy answering those sort of letters, but probably nobody would write to me (even the Secretary won't write to me).

It's a bit late I know, but still very sincere, when I say "A Happy New Year to all." I regret that you will all have to put up with my burbling for another twelve months in the magazine (I hope), but I have enjoyed every minute of it, and if I have offended anybody (which I doubt) please put it down to over enthusiasm in the greatest cause of all, "Amateur Radio."

WESTERN AUSTRALIA

The November meeting was held in our new rooms in the basement of Padbury Buildings, Corner St. George's Terrace and King Street, on Monday the 30th. There were 43 present, and new members elected and welcomed were 6ZX, 6RP, and 6HM. Good show!

The big item of interest was the confirmation of the winning of the Lambert Trophy (6FL, now 3AFL) by 6WG at Albany, for the first W.I.A. member to have a 50 Mc. QSO outside this State. Actually the first VK6 to work Interstate on 50 Mc. was 6HM who will receive a pennant from the Institute as recognition of his achievement. Both 6WG and 6HM worked into VK5, and 5RT is the first VK to W.A.S. on 50 Mc., f.b. 5RT.

6SA discussed the activities of certain "commercial pirates" in the Amateur bands, and reports are being forwarded to F.E. All Amateurs are encouraged to log these commercials and send information to their respective Divisions.

A good response was made to the formation of a VK6 Emergency Network—6MU being country organiser, and 6FC in the city.

Ionospheric predictions, as printed in the "A.R...," were discussed at length, and a report is being compiled for C.S.I.R. as requested by them.

Suggestions as to how VK6 can win the 1949 Remembrance Day Contest were discussed. Congratulations go to 6RU and 6KW for the highest individual scores in VK.

The next meeting will be held on January 18, and on the third Tuesday in each month from then on.

6CP gave a most interesting account of his 16 years of Amateur Radio. Clarrie recalled his DX, running 1 watt input with his first rig on 3.5 and 7 Mc. bands. He told us of two emergency contacts he will never forget. One was on 7 Mc. c.w. with an exploration in Central Australia, which had lost communication with its base at Darwin. The other was a request for medical aid from Wiluna during a time when they were out of communication with the P.M.G. at Perth. Clarrie has congratulatory letters from the parties concerned in both emergencies. His present rig is running 40 watts input with a tower and beam, and is looking for a South American to W.A.C. His talk was delivered in very fine style, and he well earned the round of applause which followed.

We wish to take this opportunity of wishing all our readers a Happy and Prosperous New Year, and may sunspots never shine on your shack during 1949!

PERSONALITIES

The Annual Dinner for VK6 Division of the W.I.A. was held on the 3rd of December at the Marelle Cafe, Hay Street. Quite a number of country members were able to be present, and a really good evening was had by all. Here are some of the personalities we meet there. From Albany came Wally 6WG. Many of us met him in person for the first time. He is a very proud man winning the Lambert Trophy for his Interstate QSOs on 50 Mc. 6RL was able to get down from Northam for this occasion. Ralph helped 6MY with a few drinks and we are not quite sure who had the most to say! Our other country visitor was 6GS of Harvey fame. Blake steered a steady course and by the way he kept his sked with 6RK, neither wanted to see TV of themselves that evening. 6MU

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made the trip from Merredin. Didn't see very much of you Mal, but we did notice you fatter over that micro-section of shark! There was a telegram from 6DX of Kalgoorlie. He was not able to get down and had a few wise words to say about "spirits." Better luck next time Bill. 6KW was the star of the evening. Ron never laughed so much before. The beer wasn't weak, but you should have heard some of those jokes!

6YZ won a special prize for his talk which was on the wire recorder. Dick took it in good part. 6MY kept us all guessing with a couple of quiz sessions. What about one for the judges Mal? 6KE left his bee-farm to join in the festivities. Keith was rather quiet but had his share. 6JN and 6JP had the afternoon "off the chain." John and Jack enjoyed themselves before and after. "Silent Night" was John's theme en route home to Kalamunda. 6HR told us all about nothing and he then settled down over by the barrels along with 6KW and 6FW. Ross Hunt put on a magician's act. It went over really well. 6CM, his assistant for one act, nearly went too. Thanks Ross for a really f.b. show. Among our visitors were Mr. Jewell, Bill Sprogue, Keith Taylor and Ray Campbell. Hope they won't be visitors next year, but active members of the Institute.

6RU gave DX away for once. Jim was a trifle worried though, in case the band came good while he wasn't around. 6RO organised the grog—we nearly missed out too! Was Bert's face red? Anyway, some quick thinking saved the situation. 6SA gazed longingly at the host of trophies to be won by members. Which one did you take home Jim? What happened that 500 microamp. meter? 6JS showed us a couple of films. What about a Donald Duck next time Jack, instead of E. and M.? 6GA recently W.A.C. told us all about it and how not to send QSL cards by air mail! Our worthy president 6WH had a few mouthfuls to say. He tailed along with 6AG. Yes, 6AG had tickets on himself. 6PW celebrated the successful termination of his recent examinations. Congratulations on your B.Sc. o.m. f.b. Look out DX, here comes Ray! 6SN had a pocket full of wire puzzles. He got quite a few of the boys in trying to work them out. We found 6GC tucked away in a dark corner. Bob was hot under the collar, just why, we don't know.

6KB put in an appearance. Pleased to see you there Val, and hope you can get along to a few meetings during 1949. 6CP never touched the "lolly-water." Clarrie caught an early train home and only just in time. 6HL had a different kind of beam. Two round elements and a folded elbow. What was that about "sporadic pea" (ex Menu) Harry? 6FC enjoyed the Savouries, i.e. insulated wafers, section of wave guides and micropups!

6CK was looking for a mate on the "lolly-water." Just as well you didn't see me Col. There were 45 Amateurs and about 10 visitors present, and by 11.30 p.m. the two casks were drained, so it is thought everyone had a jolly good evening. The "do" closed in orderly fashion. All the bands were strangely quiet on Saturday, but on Sunday we did hear one or two of the lads back in their usual places, among the QRM.

You will be reading this in January, so here's hoping you all had a very Happy Christmas, and now, that 1949 will bring you each 100 watts, a rotary beam, a 15 tube d.c. receiver, DX C.C. and small slice of Prosperity.

TASMANIA

NORTHERN ZONE

The first official visit of State headquarters officials and members was paid to this zone over the week-end of 20th November. Amongst those making the trip were Mr. Lon Jensen, our State President, and Mr. Joe Brown, the State Secretary. The visit opened officially with a meeting held in the Launceston Y.M.C.A. at 8 p.m. on the Saturday evening. Mr. Len Crooks, the Zone President, officially welcomed our guests and Mr. Lon Jensen replied on behalf of the visitors.

Owing to the various discussions and meetings held before the formation of the zone, no problems arose and the meeting was confined mainly to discussions on various interests affecting our Division as a whole. Mr. Joe Brown gave us a general outline of the Division's activities over the preceding six months and the meeting was closed in time to allow all those desirous of so doing, time to sample the local brew before going to supper at 10 p.m.

Around the supper table conversations could be heard about DX, the ultra highs, and all the various interests associated with Ham Radio and the festivities concluded, in some instances I am told, about the time good Hams should be calling CQ DX South Africa. On the Sunday morning visits were paid to the various shacks and the visitors left for Hobart at midday.

VK9YY advises that as he is now in the north and that as he is still a member of this Division, we can consider him a member of this zone. Bill will be about on approximately 14020 Kc. at 8 p.m. Thursdays on sked with myself so members can raise him then should they want a QSO.

At the last meeting of this zone Mr. Len Crooks resigned from the position of President and Mr. Don Brooks was elected in his stead. I feel quite sure that all members will give Mr. Brooks the same support accorded our past President.

Don't forget our meeting nights are always on the second Friday of each month so there is no excuse. An excellent itinerary has already been arranged for 1949 with plenty of interesting lectures.

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FIFTY AND UP

NEW SOUTH WALES

The month of November provided quite some interesting activity which included VK5 stations actually contacting VK6s., thereby being eligible for the coveted W.A.S. on 50 Mc. We understand that VK5RT was the first to be so fortunate and we would take this opportunity of offering congratulations on this worthwhile achievement. Since this contact, we have it on good authority that some half dozen VK5s have also qualified for W.A.S. on 50 Mc. So it has happened at last! which proves that careful observation and attention to all details, is essential for reliable v.h.f. contacts especially 50 Mc.

Sporadic E reflections has also been responsible for N.S.W. stations contacting all other States (excepting VK6) during the month and towards the latter part ZL signals have been heard and worked at several Sydney and metropolitan locations.

2LY in Katoomba also was very successful with ZL stations, contacting as many as 10 in one evening. This should help considerably to add some few points to his score in the v.h.f. contest. 2ADT and 2RU also seem to be doing very well in the contest, but we believe that some Sydney people have quite good scores and the final results should be very interesting. 2WJ and 2MQ have been successful in making two-way contact with 2RU in Gosford on 144 Mc., all using modified SCR522 equipment with horizontal beams.

288 Mc. has suffered a reverse during this month as far as activity is concerned, but "diehards" such as 2LZ, 2ABZ, 2AZO, 2ND and 2HL have been heard consistently during odd intervals.

It was reported incorrectly in a recent issue that 2NO has been operating on 576 Mc. with 2RF. This should read 2ND who seems to have quite some flair for experimentation, having successfully managed to get a "lighthouse" on to 10K Mc. so we hear! Ray Priddle managed to procure a Klystron 723B and is coaxing some "herbs" out of the thing on 10K Mc. per second! Just wait until his receiver troubles start!

Most of the Sydney fellows kept watch on the bands during the recent eclipse, but to date had nothing unusual to report. The Radio Research Board have appreciated greatly our efforts on their behalf during the recent Sporadic E openings, which goes to prove that some of the fraternity do really justify their existence as "experimenters."

Mr. Holloway, an engineer of the A.W.A. Co., lectured to us at the November meeting of the v.h.f. section and judging by comments heard around the bands satisfied all tastes. We appreciate Mr. Holloway's effort and we hope to hear more of him in the future. He covered the subject of "v.h.f. Receiver Design and Technique" very thoroughly and catered for the not-too-technical people, who go to make up a fair percentage of our attendance. Mr. Corbin stressed this point during his vote of thanks.

Mr. Whyte 2AWW will be our guest speaker at the December meeting, his subject being "Noise Limiter Design." We have a heap of respect for Mr. Whyte, both as a Ham and a lecturer, having had the pleasure of hearing him before at a recent meeting, and we are all looking forward with interest to hearing him once again.

The Gladesville Radio Club held another successful field day on 28th November using 7 Mc. for the hidden transmitter hunt, and 144 and 288 Mc. for those so interested.

We had the pleasure of meeting 2BW, of Wagga, in Sydney recently and he gave us some interesting information of activity from the Southern Tablelands. 2PN, 2TA, 2TC and 2GU have been contacted quite regularly by 2BW which is pleasing news and we would like some more information of activity of this nature on v.h.f's. from the lads in the bush. Judging by 2GU's signal heard and worked in Sydney, we are not surprised that Arch has been amongst the Interstate stuff with p.p. 800s and a four element beam doing the necessary work.

We know also that 2LH of Lismore, and 2ADE of Casino, have been contacting other States on 50 Mc., also that several of the country stalwarts elsewhere have actually heard the DX breaking through. What a pity they have only receiving equipment! After all, 50 Mc. is no more difficult to reach than 28 Mc. and the technique is exactly the same.

The Wollongong Radio Club are keenly interested in v.hf's. and will be very busy during the summer season arranging composite field days with other clubs in Sydney. Mount Kerna has been proved an excellent location for 144 and 288 Mc., and has all the altitude necessary for this type of communication. Who knows, they may even break the existing record on 144 Mc. of 85 miles, by contacting Newcastle from Wollongong by an all water path which, in the light of current happenings, does not seem impossible. So keep a watch for this virile club from the south. Once again we would like to stress the importance of using c.w. on v.h.f. bands; especially 50 Mc., when the DX is on the fade out.

It has been proved that a fading phone signal is almost impossible to copy when noise level has been reached, whereas the use of keyed c.w. would have made a contact possible. So think seriously of making a morse key available somewhere in the transmitter when time permits.

It was interesting to hear 2ABC's letter to the W.I.A. mentioning this very point. We could all do with some morse practice, judging by the fists one hears on the air these days.

By the time this appears in print, the v.h.f. contest will be over and won and congrats offered all round, but next issue we hope to publish the scores and comments on the running of this first v.h.f. contest by the N.S.W. Division. Perhaps other Divisional Councils in other States could sponsor something similar, thereby stimulating interest and activity in Ultra High Frequencies which is the future field, we would believe, of all Amateur Radio activities and experimentations. We feel sure you must all agree.

QUEENSLAND

Interstate activity from this State has been on a large scale of late. On 14th November 4HD worked 5RT, 5QR and 5OF; 4GE and 4XD worked 2PN who had some trouble copying the two VK4s as they were using modulated oscillators. 4GD worked 2PN, 2WJ, 2VW and 2BG and also heard 2RU, a number of VK3s and a couple of VK5s. 4HR contacted 5RT, and 4ZU worked 5PQ and 5DL.

15th November: 4BT, 4ZU and 4FN worked a number of VK3s. 19th Nov.: 4HD worked 3DI, 3PG and also heard 3ZL and 3GN. 23rd Nov.: 4CU contacted 3PG. 26th Nov.: 4ES QSOed three VK7s. 27th Nov.: 4RY worked ZL1HP; 4AW worked ZL1HP, ZL1MM and ZL1QF, and 4ES worked ZL3ZB.

28th Nov.: 4CU worked 3RR and also heard 3PG, 7XL, 7DN and 7PW; 4HD contacted 3RR, 3PG and 3HD; 4HE QSOed 3RR; 4LN worked VK3, 5, and 7; 4CU heard 4HD off the back of the beam (distance 100 miles). 29th Nov.: 4HR, 4RY and 4FN worked 7XL, 3OF and 7AB were also heard; 4HD worked 3ABG; 4ZU worked 3IM; 4HR worked 3IX; 4CU worked 3OF, 3IM and 3ABA; 4KK heard thirteen VK3s and worked five of them as well as 7XL.

1st Dec.: Townsville enthusiasts heard VK2 working each other and also working ZL, but no contacts were made with Townsville. 4HR had the band to himself when the ZLs broke through at 1725 hours on 2nd December and worked ZL1ML, ZL1HP, and ZL1FN; 4KK worked 3ZL and 3KX. 5th Dec.: 4HD worked 7XL, 7AJ, 7AB and some VK3s. 4CU worked 7XL, 7AB, 7AJ; 4XG and 4ES contacted 7AB; 4ZU was heard working VK3s.

During the period mentioned above it is believed that several other VK4s made Interstate and ZL contacts, but no details are to hand at present.

WESTERN AUSTRALIA

History was made during the early part of November, when 6HM of Kalgoorlie and 6WG of Albany made contacts on 50 Mc. band with several VK5s. Hearty congratulations to these Amateurs upon their great achievements. Read their reports. First from 6HM, quote—

"These words come of several week's observations on 28 Mc. in reports compared with other Perth stations, and from various DX reports from all over the globe. However, the first indications I received of V.H.F. possibilities occurred on the 28th October, when signals were heard at good strength up to 47 Mc. I discovered later that the 50 Mc. band was open on the two following days in the East, but unfortunately, I was not on 50 Mc. band.

"The next sign was on the 5th November when I contacted 6CN and 6EL (both of Geraldton) on 28 Mc. from 1700 to 1730 W.A. time. (This is short-skip for 28 Mc.—Ed.) Unfortunately guests arrived at 1740, and I had to go off the air.

Arrives the day (6/11/48)—"1340 W.A.S.T. contacted 5KL and PK4DA in three-way contact on 28 Mc. to arrange skeds for the following day. Cleared at 1400 hours and checked 28 Mc. band and observed short-skip again. At 1730 hours put 50 Mc. carrier on the air and went to dinner. 1820 hours returned to shack, called, and listened. Band sounded lively. Heard a weak carrier on 50.15 Mc. Called again and heard a carrier phone modulated running about S4 R3 on 52 Mc. By 1835 this carrier was peaking S9. Later, went back down the band to 50.15 Mc. and there was a phone carrier running from S3 to S9. A Q5 voice said: 'I'll call VK as I've heard a signal on 50 Mc.' (Mine?). He called VK2 and VK6 came back. It was George 5GB, who gave me S5 to S9 plus. Followed 5KC and 5RT, giving the first W.A.S. 50 Mc. Then 5PQ later worked 5GB, and finally at 2000 hours W.A.S.T. after several calls, 5RT came back again to report my signals still peaking S9, but he didn't think there were any other VK5s on the air. No further signals heard. Sigs were bearing reasonably sharp at 105 degrees or 15 degrees south of east.

"Monday, 8th November, 1905 hours W.A.S.T., heard a VK5 build up to S7. Called, but by 1915 hours, signals were gone again. Monday, 15th November at 1820 hours, heard carrier on 50.19 Mc. which faded out. I called, and 5WL answered, and reported me Q5 S3 to S8. Band faded on second over. 1855 hours, 5WL again reports Q4 S7 down to zero. He faded out on his comeback. At 1955 hours I called, and 5LJ reported me Q5 S9 and his signals were the same. Then at 2000 hours worked 5QR Q5 S9 plus. Band was as solid as a rock by this. Signals were stronger than any local I had ever worked when I was in Perth, except for 6GB (who was in same locality). Worked 5QR for about 20 minutes. Eastern States radio ranges still at S9 on 33.8 Mc. No other VKs heard on 50 Mc. Called again at 2045 hours and worked 5QR again for 7 minutes, when the band faded. Note.—VK3s were showing good strength at this time on 28 Mc., but no signs from Radio ranges at all.

"The 28 Mc. band during all these tests showed nothing unsual as far as DX was concerned, but it was unusual in respect to short skip. This could mean that the m.u.f. was not actually rising, and the break-through would be attributed to Sporadic E, which I personally think was responsible for our contacts.

" A point of interest is the VK5s' opinion that my signals were being received via reflection from a storm front north-west of Adelaide. This does not altogether agree with my bearings here. On the occasions of both break-throughs, bearings here were identical, and weather conditions were entirely different on both dates. Another point of interest is that while in contact with 5QR, when signals were solid, I could not receive him at all on a vertical antenna, but his signals were S9 on the 50 Mc. beam which is horizontal and mounted just 6 ft. above the 28 Mc. array.

"Would welcome comments from any v.h.f. boys, particularly in regard to the cause of these transmissions, also to any observations they may have made on the dates mentioned. Their comments may be of great help in determining any future predictions, e.g., the co-incidence of the Radio Ranges with 50 Mc. transmissions—VK6HM."

The following is a list of stations heard and worked by 6WG of Albany, on the 50 Mc. on Monday 15th November. All times are again W.A.S.T.: heard 5LJ c.w. RST 559 (no contact). 1840 hours worked 5GH Q5 S6, he received 6WG Q5 S9 plus. 1845 hours heard 5QR Q5 S7 (phone). 1845 hours heard 5RT's phone. 1909 hours worked 5QR Q5 S8, 6WG's signals Q5 S8. 1918 hours worked 5LJ Q5 S6-7, 6WG's sigs Q5 S5 to S9 plus. 1922 hours 5GB Q5 S8, 6WG's signals Q5 S7 to S9. 1930 hours heard 5KC Q5 S3 to S4, too weak to copy on phone. 1934 hours worked 5GB Q5 S8, 6WG's signals were Q5 S8. 2103 hours heard 5QR working 5LT; band closed at 2110 hours. 6WG gave 5LJ his W.A.S.

No reports have come in from Amateurs in Perth. It is doubtful whether anything was heard during those momentous occasions. However, both 6LW and 6FC are on constant watch whenever they are able, and in between listening periods, put out sigs on the 50 Mc. band. 6LW approximately 50.25 Mc. beamed East, 6FC approximately 50.1 Mc. with up to 90 watts input, using a longwire antenna, from 1730 hours onwards.

Another listener is 6GS of Harvey. He has no 50 Mc. transmitter, but works cross-band, transmitting on about 7075 Mc. approx., while 6EC at Minding, near Wagin, puts out a sig on 50.8 Mc. using a six element curtain. He has no receiver

yet, so also has to work cross-band, receiving on 40 metres. 6EC has been heard both in Perth (125 miles) and also by 6WG of Albany approximately the same distance. This would be via ground wave propagation.

TASMANIA

The 50 Mc. band opened quite a number of times during the past month, but up till the time of writing these notes (13/12/48) conditions have been patchy and only the keenness of some of the newcomers to the band in the Hobart area has helped to make this report worth while.

No reports are to hand of any contacts that the Northern Gang have made, but we know they are quite active because of stations in other States heard calling them.

7AJ has contacted the following stations since 28/11/48 to date: 4ES, 4HR, 4OU, 4AW, 4RY, 4BT, 4KK, 2ADT, 2VC, 2BZ, 2ADE, 2WJ, 2PN, 2LY, ZL3AR, ZL4DR, and ZL4GY.

7DH has contacted 2ADT, 2BZ, 2VU, 2ADE, 2LY, 2PN, 2WJ, 4ZU, 4ES, 4BT, 4RY, 4CU, 4LN, 4HR, ZL3LB, ZL4DR, ZL2DS, and ZL4GY.

7OW has also made many contacts and also reports reception of a VK6.

In view of the fact that the band has never really opened fully as yet, the number of stations contacted by 7AJ and 7DH is indicative of the time and effort these lads are putting into the work and they are to be commended on their respective results.

144 Mc. DIGEST by Bill Hartley

Ideal conditions prevailed most of the time for the Victorian 144 Mc. Field Day on Sunday, 5th December. No new DX records were made, and 25 stations put in an appearance and of this number six went out portable. The most successful of these would appear to be 3ACM located at the look-out on Mt. Dandenong, 2,077 feet high. From this point 21 different stations were worked with the 3ABA contact of 88 miles as the best for the day, next was 3CI for 75 miles, 3XM 47 miles, and approx. 60 miles to the Geelong gang. All signals worked were R5 S9, except 3ABA-YS who were R5 and S8, this portable outfit did not do so well as on other days probably due to the location Mt. Tarrengower, which seems to be ideal as it was given a altitude of 2,000 feet, yet only three contacts were made, namely 3ACM, 3VF at Drysdale (R5 S7), and 3ABG portable at Mount Callens (1,760 feet), near Avenel, for a R5 S9 both ways report. They heard a newcomer in 3HW, of Ballarat at R5 S7 for a distance of 40 miles.

Apparently the 50 Mc. break-through on the field day had a lot to do with the absence of several country stations who reported to be ready, willing, and able. 3ABG was heard by 3CP in Melbourne, but some trouble seemed to be in John's receiver. He made contact with 3ACW, 3UI, 3ABA and 3ACM. 3CI lead a lonely life on 2 metres at Mt. Fatigue, approx. 87 miles from Melbourne. His contact with 3ACM was R5 S9 both ways and was heard by 3XM at Arthur's Seat (1,031 feet) at R5 S7. 3XM, on in the afternoon, worked 3AJ, 3EL, 3ACM, 3XA, 3EW, 3EM, 3LS and 3ASG, and heard 3CI, 3BW, and 3TO. Rain proved the QRM factor at that location as the sigs were washed out.

A novelty was added to the operations by 3ASG going out portable to the City, and Bourke St. of all locations! Steve brought into use the wire recordings of stations that were worked and these were played over at the December v.h.f. group meeting, much to the surprise of several Hams who did not know their own voices. So ended the day, much done for little, and almost a case of not enough stations. The indications do point out that band conditions could be much better for DX work and it is hoped that the future will see stations go out afield on week-ends irrespective of field days in the effort of finding good conditions, that is if there is such a medium.

The following were active over the past month: VK3s AJ, ABA, ACM, AKE, ASG, ADC, MB, MN, XA, XM, LS, LH, EM, EL, ED, EH, TO, JO, BQ, BU, BW, VF, OP, ACR, EW, VZ, and RZ. Don 3XA joined the band in some manner by using a 10 watter 522 feeding a dipole attached to the picture rail inside the shack and receives on a AR301, ASV-type of receiver. The output of the 30 Mc. i.f's. are fed into the super pro for finer tuning. Seven contacts were made in two nights with an S7 signal to 3VF. 3MN, Milton, was heard back again in a three-way with 3ED and 3LS. 3OD of Horsham spends a lot of time listening to lots of signals, but unfortunately due to the infrequent use of call signs he is hard put to identify the stations. For receiving he has a super-regen. (CV6, 6C5, 6V6) used with a 16 element horizontal beam, fed with 300 ohm line. The signals come from a 50 Mc. unit tripling in the p.a. and driving another 829 p.a., a later addition will be a 522.

3ABG reports as to being on the band permanently with a modified 522 which is operated at home on 24 volts and on 12 when portable. The 12 volts is derived from a petrol driven Delco unit. When the ideal antenna is found it will be perched 58 feet high. At present the lazy H curtain reflected array is in hand. 3ACW is another of the N.E. group now on the band, at present using a mod. osc., super-regen. together with the four element close-spaced beam. Quite the right gear to start with for getting experience on v.h.f's. 3UI out last field day used his 522 equipment and dipole, but has to travel much to find the high spots. Another 522 user is our ever-busy Technical Editor 3VZ. Jack, when he obtains time for himself, will be spotted for good on 144.2 Mc. In addition to the 522 he has a band switched converter feeding the regular AMR200, and hopes to finish his new horizontal beam during the Xmas holidays. 3PT is building simple, but powerful, gear for a start, as it will be the p.p. mod.-osc. culled from "Radio News." His buddy 3AB is lining up his receiver via 3TO's standard frequency service. Skywires are the hold up at Wangaratta, for it seems to be the worry to Harold as to what is best for 3YV.

Visitors to the 144 Mc. shacks are very frequent now, 3ABA showed the way with 5GN, while 3ASG shoved the mike to 3TA of Horsham. 3OD, of the same busy town, is also down. Next in town for a look-see will be 5JA.

3EL is very busy with the idea of a "turnstile" antenna. By the time these notes appear 3QK will have his 522 perking on 146.79 Mc., a frequency which is quite sensible to use. The power supply at Churchill Is. is from a 32 volt house lighting supply and for a start a simple dipole will be used 230 feet above sea level. 3EM presented himself with a Xmas present in the shape of a 16 element beam and now is heard to advantage. Harry 3KN is making enquiries re simple 144 Mc. gear for mobile use; the sign of the times, or is it the weather? It is reported that 3YV is on the band at last via a six element beam and it is hoped that contacts this way will not be overlooked by the N.E. network. 3UI sports a 522 unit working on a type 19 genemotor, antenna in use at present is a 72 ohm co-ax dipole.

3ACW for the present is using p.p. 7193 mod.-osc. and a 6F6 in Heising modulation, carbon mike is used and running about 10 watts input on 146 Mc. Super-regen. of 9002, 6J7G, 6G6 is used on the 4 element c.s. rotary 28 feet high. The Geelong network is still adding recruits, for in addition to 3BW, VF, BU, AKE, WT, AJF, etc., 3ABK is on with a mod.-osc. to a three element beam; 3ALG is building up a CV6 transceiver. 3AKE has just put up his eighth beam fully rotary, 40 feet high complete by control wires for control of motors and indicators, etc. 3BU won't make the League team this year on account of the old leg playing up.

3RZ is putting very strong signals on 146 Mc. from his temporary rig of a RK34 mod.-osc. which is boosted by p.p. 45s, antenna is an indoor three element series phased array, receiver 955 super-regen. two audio. At 3CP's a very nice 22 watter is in action to a 46 feet high half wave dipole, fed with 75 ohm flat twin, a 3 tube converter of two 6AK5s-6J6 feed the big communication receiver, transmitter line up has RL7 c.o. tripling, RL7 doubler, 832 buffer, p.p. RK34 trebler, and a neutralised RK34 p.a. 3HW and 3SE are now conducting a series of test signals on 144 Mc. beamed to Melbourne. 3HW is using a 3 element beam plus 522 gear and it is understood to be only a temporary hook-up until a bigger job is made.

Indications of the N.S.W. v.h.f. contest held on 50, 144 and 288 Mc. show that 2LY, 2LZ up in the Blue Mountains are well in front with huge scores, also 2ADT of Cessnock whose score is over 600 points. The regular gang on 144 Mc. is made up of VK2s VW, WJ, ANB, ABB, UV, PU, ASK, AZ, ASP, ABZ, HL, LZ, MQ, NB, AJA, FK and PF. 2VW has just completed his mobile gear comprising a 12 watt pair of CV6s with a 6L6 and 6J5 as modulators together with a 9002 super-regen. and two stage audio used with a simple dipole half wave. Finds he can hear and work all the stations just as well with simple gear as with super-hets and high power rigs. 2RU of Gosford has at last got his beam up and now is classed as a local.

Annual holidays cut short the attempt by 7AB to work the 144 Mc. rig over the Bass Strait to 3CI; when things break even VK3 will know where it is coming from.

The Mt. Gambier boys were on the job for the VK3 field day but had nothing to report except 5MS will have a bigger receiver for the next field day, the unit is a BC733. 5JA is busy scouring the countryside for any windmill towers that are going begging. No contact was made to Mt. Lofty. 5JD is QRU with his mechanical blowfly (Austin 7), and next item is a mobile 144 Mc. rig for VK5.

For the benefit of those interested in v.h.f. matters and who have not access to the R.S.G.B. "Bulletin," it may be of some interest to note that the Gs commenced operations on their 145-146 Mc. band on 1st September. Disposal gear is well in use for both purposes including 522s, antennae of the 3-4 c.s. element beams seem to be the most popular with the Yagi next best. High power does not appear to be in favour as 25 watts seems to be the maximum used. Quite a number of contacts have been made up to 250 miles and two-way hook-ups across the English Channel to Holland and Belgium.

CORRESPONDENCE

APPRECIATION

Mary St., Waterman's Bay,
Western Australia.

Editor "A.R.," Sir,

Recently I visited VK3 for a few days, and whilst there, called in at 191 Queen Street, and met your Divisional Secretary, Mrs. Cross.

We had quite a chat about Amateurs generally. Mrs. Cross conversed as though she herself were an Amateur, and I felt quite at home rag chewing about "QSOs, DX, 50 Mc., etc.," with her.

I asked her could she by any chance tell me where a certain VK3 worked in Melbourne, as I would like to see him. (I knew his QTH was 20 miles from the city, and I didn't have time to visit him at his home.) She dialled a phone number, but no joy. She asked me to ring her in about an hour's time and she may have some information for me.

Rather doubting that she would have been able to locate my friend, I did ring, and to my amazement she told me where he worked, how to get in touch with him, and also that he was anxious to see me! That was service!

Should anyone reading this be visiting VK3, go along and have a yarn with Mrs. Cross. You can be sure of an enjoyable Amateur QSO, and if she can help you find your way around the big city, she will most certainly do so.

VK3 have a real "find" in Mrs. Cross. She's doing a grand job, and taking a leading hand in building up the organisation of the Victorian Division of the W.I.A.

—D. COUCH, VK6WT.

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D.C. VOLTS	CHOKE INPUT
866	(A) 515v. (B) 415v.
5Z3	(A) 415v. (B) 310v.

ITEM 21. **TYPE No. 27/880**

Primary: 200-230-240v. .... 250vA 50 cps.
H.T. 880/710/710/880v. 275 mA Choke Input
Base: 5x6x4-5/8" H .... Wgt. 18 lb.
Mtng.: V15 .... "S" is 3"

D.C. VOLTS	CHOKE INPUT
866A	(A) 765v. (B) 615v.

ITEM 22 **TYPE No. 4/1250**

Primary: 200-230-240v. 500vA 50 cps.
H.T.: 1250/1250v. 400 mA Choke Input
Base: 6½x6x6½" H (app.) .... Wgt. 27 lb.
Mntg.: .... Not Shown
D.C. Volts .... 1000v. 866 Rectifier

ITEM 23 **TYPE No. 4/1400**

Primary: 200-230-240v. 575vA .... 50 cps.
H.T.: 1400/1400v. 400 mA .... Choke Input
Base: 6½x6½x6L" H (app.) .... Wgt. 30 lb.
Mntg.: .... Not Shown
D.C. Volts .... 1250v. 866 Rectifier

CHOKES

The Chokes covered in this Section are tested under measured inductance values with rated D.C. flowing, as the meaningless "30 Henry" values are misleading to the uninitiated, and ignored by the engineer. They are smoothing inductances for use as the first choke in condenser input systems, or, of course, as the second choke for choke input circuits.
All inductances are sufficiently high for effective filtering, while D.C. resistance values are made low to maintain good regulation.

ITEM 24. **TYPE No. 3068**

Maximum Direct Current .... 60 mA
D.C. Resistance .... 400 ohms
Voltage Drop .... 24 volts
Maximum Inductance .... 25 Hys.
Minimum Inductance .... 15 Hys.
Base: 3½x2x2¼" H .... Wgt. 1 lb. 8 ozs.
Mntg.: MH1 .... "S" is 1"
Insulation .... 500v.

ITEM 25. **TYPE 50825**

Maximum Direct Current .... 80 mA
D.C. Resistance .... 500 ohms
Voltage Drop .... 40 volts
Maximum Inductance .... 30 Hys.
Minimum Inductance .... 18 Hys.
Base: 3x3x2¾" H .... Wgt. 2 lb. 10 ozs.
Mntg.: V2 .... "S" is 1¼"
Insulation .... 750v.

ITEM 26. **TYPE No. 301214**

Maximum Direct Current .... 125 mA
D.C. Resistance .... 300 ohms
Voltage Drop .... 38 volts
Maximum Inductance .... 30 Hys.
Minimum Inductance .... 12 Hys.
Base: 3¼x3x2¾" H .... Wgt. 3 lb. 2 ozs.
Mntg.: V2 .... "S" is 1½"
Insulation .... 750v.

ITEM 27. **TYPE No. 201515**

Maximum Direct Current .... 175 mA
D.C. Resistance .... 200 ohms
Voltage Drop .... 35 volts
Maximum Inductance .... 25 Hys.
Minimum Inductance .... 12 Hys.
Base: 3¼x3x2¾" H .... Wgt. 4 lb. 4 ozs.
Mntg.: V14 .... "S" is 1½"
Insulation .... 1000v.

ITEM 28. **TYPE 102512**

Maximum Direct Current .... 250 mA
D.C. Resistance .... 100 ohms
Voltage Drop .... 25 volts
Maximum Inductance @ 10v. A.C. .... 15 Hys.
Maximum Inductance @ 80v. A.C. .... 20 Hys.
Full Load Inductance @ 10v. A.C. .... 7 Hys.
Full Load Inductance @ 80v. A.C. .... 10 Hys.
Base: 3¾x2-7/8"x3½" H .... Wgt. 5 lb. 4 ozs.
Mntg.: V14 .... "S" is 2"
Insulation .... 1000v.

ITEM 29. **TYPE No. 5735**

Maximum Direct Current .... 300 mA
D.C. Resistance .... 60 ohms
Voltage Drop .... 18 volts
Maximum Inductance @ 10v. A.C. .... 10 Hys.
Maximum Inductance @ 80v. A.C. .... 14 Hys.
Full Load Inductance @ 10v. A.C. .... 5 Hys.
Full Load Inductance @ 80v. A.C. .... 7 Hys.
Base: 4x3-7/8"-8x4" H .... Wgt. 7 lb. 12 ozs.
Mntg.: Not Shown .... "S" is 2"
Insulation .... 1000v.

ITEM 30. **TYPE No. 35215**

Maximum Direct Current .... 15 mA
D.C. Resistance .... 350 ohms
Maximum Inductance .... 30 Hys.
Minimum Inductance .... 15 Hys.
Base: 2x1-3/8" H .... Wgt. 8 ozs.
Mntg.: MHO .... "S" is 11/16"

ITEM 31 **TYPE No. 294**

Maximum Direct Current .... 1 Amp.
Filament Choke .... 4 m/Hy
Base: 2 x 1⅛ " H .... Wgt. 8 ozs.
Mntg : MHO .... "S" is 11/16"

SWINGING CHOKES

The swinging chokes in this section have the same general design and constructional features as the smoothing chokes above. Gap ratios, however, are modified on an incremental inductance bridge to develop large initial inductances, and, at the same time, to maintain sufficient inductance under full load conditions to comply with the circuit requirements of high efficiency rectifier systems where the maximum possible regulation is required.

ITEM 32 **TYPE No. 10255**

Maximum Direct Current .... 250 mA
D.C. Resistance .... 100 ohms
Voltage Drop .... 25 volts
Swinging L is from 20 Hys to 5 Hys
Base: 3¾ x 2⅞ x 3½" H .... Wgt. 5lb. 4 ozs.
Mntg: V14 .... "S" is 2"
Insulation .... 1000 volts.

ITEM 33 **TYPE No. 5734**

Maximum Direct Current .... 300 mA
D.C. Resistance .... 60 ohms
Voltage Drop .... 18 volts
Swinging L is from 15 Hys to 4 Hys
Base: 4 x 3⅞ x 4" H .... Wgt. 7 lb. 12ozs
Mntg: Not shown .... "S" is 2"
Insulation .... 1000 volts

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